



Internal Use Only

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PLASMA TV

SERVICE MANUAL

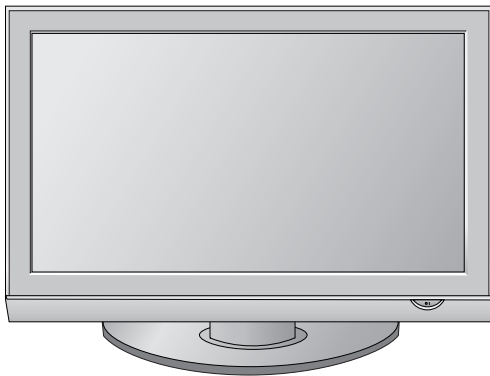
CHASSIS : PD83A

MODEL : 42PG2000

42PG2000-ZA

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this monitor is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by its Neck.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between $1M\Omega$ and $5.2M\Omega$.

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

Do not use a line Isolation Transformer during this check.

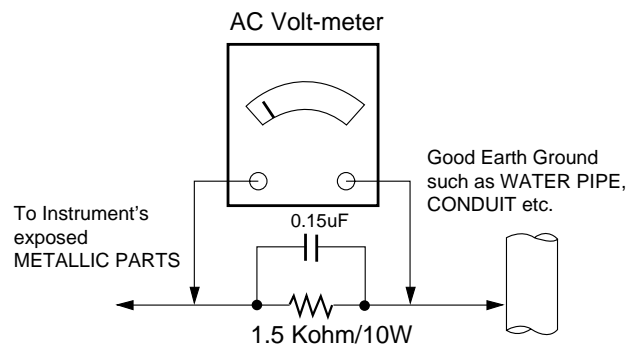
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SPECIFICATIONS

NOTE : Specifications and others are subject to change without notice for improvement.

√ Application Range

This spec is applied to the 50" PLASMA TV used PD83A Chassis.

Chassis	Model Name	Market	Brand	Remark
PD83A	42PG10/20/3000 50PG10/20/3000 60PG3000	UK, German, Italy, France, Sweden, Finland, Spain, Netherlands, Belgium, Luxembourg, Greece, Denmark, Czech, Austria, Poland, Portugal, Norway, Rumania, Hungary, Bulgaria, Coratia, Serbia, Swiss, Slovenia, Russia	LG	

√ Specification

Each part is tested as below without special appointment.

- 1) Temperature : 25±5°C (77±9°F), CST : 40±5
- 2) Relative Humidity: 65±10%
- 3) Power Voltage: Standard Input voltage (100-240V~, 50/60Hz)
* Standard Voltage of each product is marked by models.
- 4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with SBOM.
- 5) The receiver must be operated for about 20 minutes prior to the adjustment.

√ Test Method

- 1) Performance : LGE TV test method followed.
- 2) Demanded other specification
Safety : CE, IEC specification
EMC : CE, IEC

Model	Market	Appliance	Remark
42PG10/20/3000 50PG10/20/3000 60PG3000	UK, German, Italy, France, Sweden, Finland, Spain, Netherlands, Belgium, Luxembourg, Greece, Denmark, Czech, Austria, Poland, Portugal, Norway, Rumania, Hungary, Bulgaria, Coratia, Serbia, Swiss, Slovenia, Russia	Safety : IEC/EN60065 EMI : EN55013 EMS : EN55020	TEST

√ Module Specification

(1) 42"

No	Item	Specification	Remark
1	Display Screen Device	42 inch Wide Color Display Module	PDP
2	Aspect Ratio	16:9	
3	PDP Module	PDP42XG####, RGB Closed Type, Film Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

(2) 50"

No	Item	Specification	Remark
1	Display Screen Device	50 inch Wide Color Display Module	PDP
2	Aspect Ratio	16:9	
3	PDP Module	PDP50XG####, RGB Closed Type, Film Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

(3) 60"

No	Item	Specification	Remark
1	Display Screen Device	60 inch Wide Color Display Module	PDP
2	Aspect Ratio	16:9	
3	PDP Module	PDP60X7####, RGB Closed Type, Film Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

√ **Model General Specification**

No	Item	Specification	Remark
1	Market	UK, German, Italy, France, Sweden, Finland, Spain, Netherlands, Belgium, Luxembourg, Greece, Denmark, Czech, Austria, Poland, Portugal, Norway, Rumania, Hungary, Bulgaria, Coratia, Serbia, Swiss, Slovenia, Russia	Analog Only
2	Broadcasting system	1) PAL-BG 2) PAL-DK 3) PAL I, I' 4) DVB T(ID TV) 5) SECAM L/L'	
3	Receiving system	Analog : Upper Heterodyne Digital : COFDM	
4	Scart Jack(2EA)	PAL, SECAM	
5	Video Input (1EA)	PAL, SECAM, NTSC	4 System : PAL, SECAM, NTSC, PAL60
6	S-Video Input (1EA)	PAL, SECAM, NTSC	4 System : PAL, SECAM, NTSC, PAL60 SPEC OUT FOR 42/50PG1000
7	Component Input (1EA)	Y/Cb/Cr, Y/Pb/Pr	SPEC OUT FOR 42/50PG1000
8	RGB Input	RGB-PC	
9	HDMI Input(3EA)	HDMI-DTV & SOUND	1EA HDMI FOR 42/50PG1000
10	Audio Input (3EA)	PC Audio, Component, AV	L/R Input

ADJUSTMENT INSTRUCTION

1. Application Range

This spec sheet is applied all of the PDP TV, PD83A chassis.

- Baud rate :115200 bps
- RS232 Host : PC
- echo : none

2. Specification.

- (1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
 - (2) Adjustment must be done in the correct order.
 - (3) The adjustment must be performed in the circumstance of $25\pm5^{\circ}\text{C}$ of temperature and $65\pm10\%$ of relative humidity if there is no specific designation.
 - (4) The input voltage of the receiver must keep 100~240V, 50/60Hz.
 - (5) The receiver must be operated for about 5 minutes prior to the adjustment when module is in the circumstance of over 15°
 - In case of keeping module is in the circumstance of 0°C , it should be placed in the circumstance of above 15°C for 2 hours
 - In case of keeping module is in the circumstance of below -20°C , it should be placed in the circumstance of above 15°C for 3 hours,.
- After RGB Full White in HEAT-RUN Mode, the receiver must be operated prior to the adjustment.
 - Enter into HEAT-RUN MODE
 - (1) Press the POWER ON KEY on R/C for adjustment.
 - (2) OSD display and screen display PATTERN MODE.
- * Set is activated HEAT run without signal generator in this mode.
- * Single color pattern (WHITE) of HEAT RUN MODE uses to check panel.

Caution: If you turn on a still screen more than 20 minutes (Especially digital pattern, cross hatch pattern), an after image may be occur in the black level part of the screen.

Caution: Using 'power on' button of the control R/C, power on TV.

3. ADC Calibration Protocol (RS232)

NO	Item	CMD1	CMD2	Data 0	Remark
ADC adjust	ADC adjust	A	D	1 0	
Data Read	ADC Parameter	A	D	2 0	Transfer 18Byte (Input resolution Data)
	Digital Data	A	D	3 0	
Default Write	ADC Parameter (Average)	A	D	4 0	
	Adjustment Confirmation	A	D	9 9	To check ADC Adjustment on Assembly line
Enter Adjust Mode	Adjust Mode In	A	D	0 0	When transfer the 'Mode In', Carry the command.
	Adjust Mode Out	A	D	9 0	

4. ADC Adjustment

ADC	Component	RGB-PC
MSPG925FS	Model : 209(480i 60Hz)	Model : 60
	223(1080i 60Hz)	(1024*768 60Hz)
	Pattern : 65	Pattern : 65

4-1. Adjustment of RGB

(1) Auto RGB Gain/Offset Adjustment

- 1) Convert to PC in Input-source (refer to I2C command)
- 2) Signal equipment displays
 - Output Voltage: 700 mVp-p
 - Impress Resolution XGA (1024 x 768 @ 60Hz)
 - Model : 60 in Pattern Generator
 - Pattern : 65 in Pattern Generator (MSPG-925 SERISE)



- 3) Adjust by commanding AUTO_COLOR_ADJUST

(2) Confirmation

- 1) We confirm whether "0xAA (RGB)" address of EEPROM "0xA2" is "0xAA" or not.
- 2) If "0xAA (RGB)" address of EEPROM "0xA2" isn't "0xAA", we adjust once more
- 3) We can confirm the ADC values from "0xA4~0xA9 (RGB)" addresses in a page "0xA2"

* Manual ADC process using Service Remocon. After enter Service Mode by pushing "ADJ" key, execute "ADC Adjust" by pushing "G" key at "ADC CALIBRATION: RGB-C"

4-2. COMPONENT input ADC

(1) Component Gain/Offset Adjustment

- 1) Convert to Component in Input-source (refer to I2C command)
 - 2) Signal equipment displays
 - Impress Resolution 480i
 - MODEL: 209 in Pattern Generator(480i Mode)
 - PATTERN : 65 in Pattern Generator(MSPG-925 SERISE)
- Impress Resolution 1080i
- MODEL: 223 in Pattern Generator(1080i Mode)
- PATTERN: 65 in Pattern Generator(MSPG-925 SERISE)



(2) Confirmation

- 1) We confirm whether "0xB3 (480i)/0xBC (1080i)" address of EEPROM "0xA2" is "0xAA" or not.
- 2) If "0xB3 (480i)/0xBC(1080i)" address of EEPROM "0xA2" isn't "0xAA", we adjust once more
- 3) We can confirm the ADC values from "0xAD~0XB2 (480i)/0XB6~BB (1080i)" addresses in a page "0xA2"

* Manual ADC process using Service Remocon. After enter Service Mode by pushing "ADJ" key, execute "ADC Adjust" by pushing "G" key at "ADC CALIBRATION :COMPONENT".

Caution: Each PCB assembly must be checked by check JIG set.
(Because power PCB Assembly damages to PDP Module, especially be careful)

5. POWER PCB Assembly Voltage Adjustment (Va, Vs voltage Adjustment)

5-1. Test Equipment: D.M.M 1EA

5-2. Connection Diagram for Measuring:

Refer to fig.1

5-3. Adjustment Method

Before Voltage ADJ, do HEAT RUN on 100% Full White Pattern. (or RF(ATV) Noise Pattern)

(1) 42" EAY39333001 Va Adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Va pin of P811, connect - terminal to GND pin of P811.
- 2) After turning VR901, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; $\pm 0.5V$)

(2) 42" EAY39333001 Vs Adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Vs pin of P811, connect - terminal to GND pin of P811.
- 2) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; $\pm 0.5V$)

(3) 50" EAY39190301 Va Adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Va pin of P811, connect - terminal to GND pin of P811.
- 2) After turning VR901, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; $\pm 0.5V$)

(4) 50" EAY39190301 Vs Adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Vs pin of P811, connect -terminal to GND pin of P811.
- 2) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; $\pm 0.5V$)

(5) 42" EAY43509401 Va Adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Va pin of P11, connect - terminal to GND pin of P11.
- 2) After turning VR951, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; $\pm 0.5V$)

(6) 42" EAY43509401 Vs Adjustment (refer fig.1)

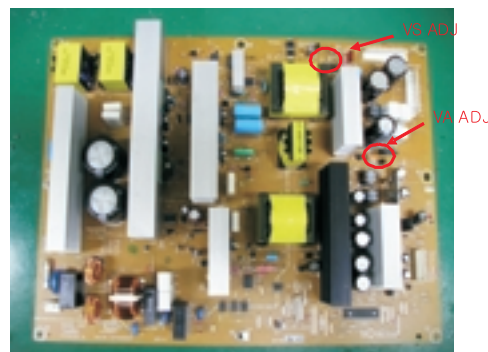
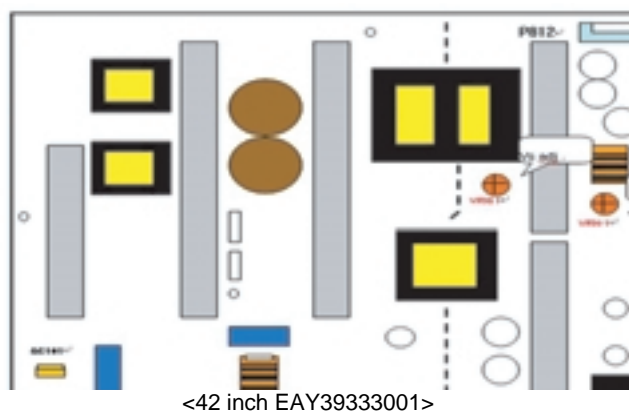
- 1) Connect + terminal of D. M..M. to Vs pin of P11, connect - terminal to GND pin of P11.
- 2) After turning VR901, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; $\pm 0.5V$)

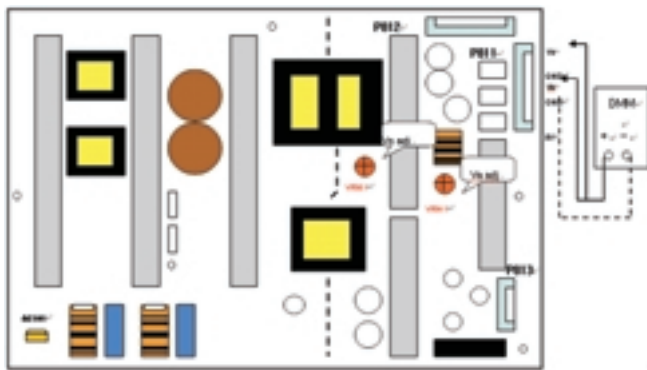
(7) 60" EAY41410101 Vs Adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Va pin of P816, connect - terminal to GND pin of P816.
- 2) After turning VR901, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; $\pm 0.5V$)

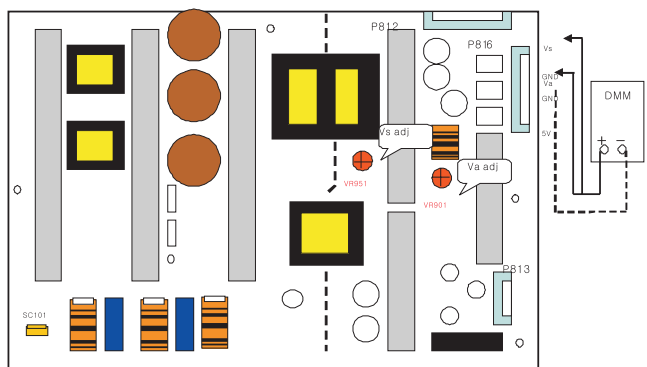
(8) 60" EAY41410101 Vs adjustment (refer fig.1)

- 1) Connect + terminal of D. M..M. to Vs pin of P816, connect - terminal to GND pin of P816.
- 2) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; $\pm 0.5V$)





<50 inch EAY39190301>



<60 inch EAY41410101>

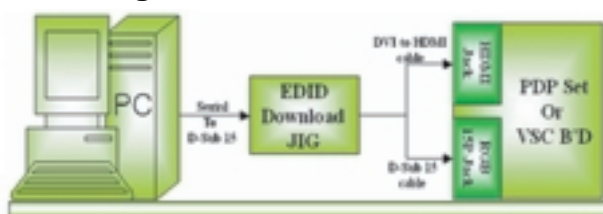
(Fig. 1) Connection Diagram of Power Adjustment for Measuring.

6. EDID(The Extended Display Identification Data) /DDC(Display Data Channel) Download

6-1. Required Test Equipment

- (1) Adjusting PC with S/W for writing EDID Data.(S/W : EDID TESTER Ver.2.5)
- (2) A Jig for EDID Download
- (3) Cable : Serial(9Pin or USB) to D-sub 15Pin cable, D-sub 15Pin cable, DVI to HDMI cable.

6-2. Setting of Device



(Fig. 2) Connection Diagram of DDC Download

6-3. Preparation for Adjustment

- (1) Connect the Set, EDID Download Jig., PC & Cable
- (2) Turn on the PC & EDID Download Jig. Set up the S/W option
- (3) Power on the Set

6-4. Sequence of Adjustment(EDID Download)

- (1) Init the data
- (2) Load the EDID data.(Open File).
- (3) Set the S/W to download.
- (4) Push the "Write Data & Verify" button. And confirm "Yes"
- (5) If the writing is finished, you will see the "OK" message.

* If TV has three HDMI INPUT, Please separate each INPUT
(Each EDID DATA is different.)

7. Download Serial Number (RS-232C)

- (1) Press "Power on" key of service R/C.(Baud rate: 115200 bps)
- (2) Connect RS232 Signal Cable to RS-232 Jack.
- (3) Write Serial number by use RS-232.
- (4) Must check the serial number at the Diagnostics of SET UP menu.
(Refer to below '6.SET INFORMATION').

8. EDID DATA

- (1) Analog RGB

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
10	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
20	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
30	30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
40	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
50	50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
60	60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
70	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F

o Detail EDID Options are below (, , , ,)

Product ID

Model Name	Product ID	Product ID	
		Hex	EDID Table
42PG1000	40307	9D73	739D
42PG2000	40349	9D9D	9D9D
42PG3000	40193	9D01	019D
50PG1000	50158	C3EE	EEC3
50PG2000	50195	C413	13C4
50PG3000	50075	C39B	9BC3
60PG3000	50180	C404	04C4

Serial No

=> Controlled on production line

Month, Year

=> Controlled on production line:

ex) Week: '03' -> '03'

Year: '2006' -> '10'

Model Name(Hex)

Model Name	Model Name(Hex)
42PG1000	000000FC0034325047313030300A20202020
42PG2000	000000FC0034325047323030300A20202020
42PG3000	000000FC0034325047333030300A20202020
50PG1000	000000FC0035305047313030300A20202020
50PG2000	000000FC0035305047323030300A20202020
50PG3000	000000FC0035305047333030300A20202020
60PG3000	000000FC0036325047333030300A20202020

Checksum

=> Changeable by total EDID data

(2) HDMI_1

The grid displays hex values for HDMI_1. The first row (00-0F) contains the Model Name (42PG1000). The second row (10-1F) contains the Product ID (40307). The third row (20-2F) contains the Hex value (9D73). The fourth row (30-3F) contains the EDID Table (739D). The fifth row (40-4F) contains the Hex value (9D73). The sixth row (50-5F) contains the EDID Table (739D). The seventh row (60-6F) contains the Hex value (9D73). The eighth row (70-7F) contains the EDID Table (739D).

o Detail EDID Options are below (, , , ,)

Product ID

Model Name	Product ID	Product ID	
		Hex	EDID Table
42PG1000	40307	9D73	739D
42PG2000	40350	9D9E	9E9D
42PG3000	40193	9D01	019D
50PG1000	50158	C3EE	EEC3
50PG2000	50196	C414	14C4
50PG3000	50075	C39B	9BC3
60PG3000	50180	C404	04C4

Serial No

=> Controlled on production line

Month, Year

=> Controlled on production line:

ex) Week: '03' -> '03'

Year: '2006' -> '10'

Model Name(Hex)

Model Name	Model Name(Hex)
42PG1000	000000FC0034325047313030300A20202020
42PG2000	000000FC0034325047323030300A20202020
42PG3000	000000FC0034325047333030300A20202020
50PG1000	000000FC0035305047313030300A20202020
50PG2000	000000FC0035305047323030300A20202020
50PG3000	000000FC0035305047333030300A20202020
60PG3000	000000FC0036325047333030300A20202020

Checksum

=> Changeable by total EDID data

(3) HDMI_2

The grid displays hex values for HDMI_2. The first row (00-0F) contains the Model Name (42PG1000). The second row (10-1F) contains the Product ID (40307). The third row (20-2F) contains the Hex value (9D73). The fourth row (30-3F) contains the EDID Table (739D). The fifth row (40-4F) contains the Hex value (9D73). The sixth row (50-5F) contains the EDID Table (739D). The seventh row (60-6F) contains the Hex value (9D73). The eighth row (70-7F) contains the EDID Table (739D).

o Detail EDID Options are below (, , , ,)

=> Please refer HDMI_1(Not apply 42/50PG1000-ZA)

(4) HDMI_3

The grid displays hex values for HDMI_3. The first row (00-0F) contains the Model Name (42PG1000). The second row (10-1F) contains the Product ID (40307). The third row (20-2F) contains the Hex value (9D73). The fourth row (30-3F) contains the EDID Table (739D). The fifth row (40-4F) contains the Hex value (9D73). The sixth row (50-5F) contains the EDID Table (739D). The seventh row (60-6F) contains the Hex value (9D73). The eighth row (70-7F) contains the EDID Table (739D).

o Detail EDID Options are below (, , , ,)

=> Please refer HDMI_1(Not apply 42/50PG1000-ZA)

Before adjusting White-balance, the AV ADC should be done.
If ADC status were "NG", Need to ADC adjustment.

9. Adjustment of White Balance

9-1. Required Equipment

- (1) Remote Controller for Adjustment
- (2) Color Analyzer (CS-1000, CA-100,100+,CA-210 or same product): CH 10 (PDP)
 - * Please adjust CA-210, CA-100+ by CS-1000 before measuring
- (3) Auto W/B adjustment instrument(only for Auto adjustment)
- (4) 15 Pin D-Sub Jack(RGB) is connected to the AUTO W/B EQUIPMENT.

9-2. AUTO White Balance Process.

Before Adjust of White Balance, Please press POWER ONLY key
Adjust Process will start by execute I2C Command (Inner pattern (0xF3, 0xFF)).

- Color temperature standards according to CSM and Module

CSM	PLASMA	Remark
Cool	11000K	
Medium	9300K	
Warm	6500K	

- CS-1000/CA-100+/CA-210(CH 10) White balance adjustment coordinates and color temperature.

CSM	Color Coordinate		Temp	±Color Coordinate
	x	y		
Cool	0.276	0.283	11,000K	0.002
Medium	0.285	0.293	9,300K	0.002
Warm	0.313	0.329	6,500K	0.002

9-3. Manual W/B Process (using adjusts Remote control)

Please Adjust in AV 1 MODE

- (1) Enter "PICTURE RESET" on Picture Mode, then turn off Fresh Contrast and Fresh colour in Advanced Control
- (2) After enter Service Mode by pushing "ADJ" key,
- (3) Enter White Pattern off of service mode, and change off -> on.
- (4) Enter "W/B ADJUST" by pushing "G" key at "3. W/B ADJUST".
- (5) Adjust W/B DATA, for all CSM, choose 'COPY ALL'

* Don't make any Gain Value over 192 and please fix one Value on 192, between B and R

9-4. Auto-control Interface and Directions

- (1) Adjust in the place where the influx of light like floodlight around is blocked.
(Illumination is less than 10ux).
- (2) Measure and adjust after sticking the Color Analyzer (CA-100+, CA210) to the side of the module.
- (3) Aging time
After aging start, keep the Power on (no suspension of power supply) and heat-run over 5 minutes

9-5. Auto Adjustment Map(I2C)

- (1) I2C (100K BPS)
- (2) COMMUNICATION START

START	6E	A	STOP	50Ms
-------	----	---	------	------

Until ACK BIT goes LOW, Repeat it.

- (3) Command form.
Command form use DDC2AB standard communication protocol.

START	6E	A	50	A	LEN	A	03	A	CMD	A	00	A	VAL	A	CS	A	STOP
-------	----	---	----	---	-----	---	----	---	-----	---	----	---	-----	---	----	---	------

- 1) LEN: DATA BYTE number to send.
- 2) CMD: Command language that monitor executes.
- 3) VAL: FOS DATA
- 4) CS: Dada's CHECHSUM that transmit
- 5) DELAY: 50MS
- 6) A: Acknowledge

(4) Adjustment Commands (LENGTH = 84)

No	Adjustment Contents	CMD(hex)	ADR	VAL[HEX]	Description
1	FACTORY ON	E0	00	00	Factory mode on
2	FACTORY OFF	E2	00	00	Factory mode off
3	EEPROM ALL INIT.	E4	00	00	EEPROM All clear
4	EEPROM Read	E7	00	00	EEPROM Read
5	EEPROM Write	E8	00	data	EEPROM Write by some values
6	COLOR SAVE (R/G/B cutoff, Drive, Contrast, Bright)	EB	00	00	Color Save
7	H POSITION	20	00	00 - 64	They have different range each mode, FOS Adjustment
8	V POSITION	30	00	00 - 64	
9	CLOCK	90	00	00 - 64	
10	PHASE	92	00	00 - 64	
11	R DRIVE	16	00 : cool 01: medium 02 : warm	00 - C0	Drive adjustment
12	G DRIVE	18	00 : cool 01 : medium 02 : warm	00 - C0	
13	B DRIVE	1A	00 :cool 01: medium 02: warm	00 - C0	
14	R CUTOFF	80	00	00 - 7F	Offset adjustment
15	G CUTOFF	82	00	00 - 7F	
16	B CUTOFF	84	00	00 - 7F	
17	BRIGHT	10	00	00 - 3F	Bright adjustment
18	CONTRAST	12	00	00 - 64	Luminance adjustment
19	AUTO_COLOR_ADJUST	F1	00	02	Auto COLOR Adjustment
20	CHANGE_COLOR_TEMP	F2	00	0,1,2,3	0 : Cool 1 : Medium 2 : Warm 3 : User
21	White Pattern	F3	00	00,FF	00: White pattern off FF: White pattern on
22	AUTO_INPUT CHANGE	F4	00	0,10,20,30, 40,60,90	0 : TV 10 : DTV 20 : SCART1 30 : SCART2 40 : Component 60 : RGB 90 : HDMI

(5) EEPROM DATA READ

1) Signal TABLE



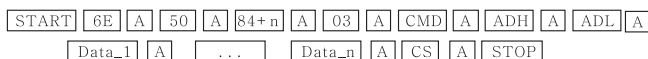
2) Command Set

No.	Adjustment contents	CMD (hex)	ADH (hex)	ADL (hex)	Details
1	EEPROM READ	E7	A0	0	0-page 0~7F Read
2				80	0-page 80~FF Read
3			A2	0	1-page 0~7F Read
4				80	1-page 80~FF Read
5			A4	0	2-page 0~7F Read
6				80	2-page 80~FF Read
7			A6	0	3-page 0~7F Read
8				80	3-page 80~FF Read

* To read the appointment Address of E2PROM by 128(80h)-byte

(6) EEPROM Data Write(serial number D/L)

1) Signal TABLE



CMD : 8Eh

LENGTH : 84h+Byte

ADH : E2PROM Slave Address (A0, A2, A4, A6, A8),
Not 00h (Reserved by Buffer To EEPROM)

ADL : E2PROM Sub Address (00~FF)

Data : Write data

2) Command Set

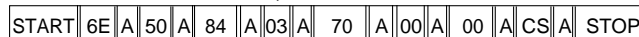
No.	Adjust mode	CMD(hex)	LENGTH(hex)	Description
1	EEPROM WRITE	E8	94	16-Byte Write
2			84+n	n-byte Write

* Description

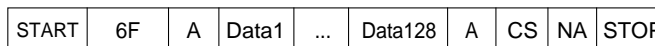
- EDID write : 16-byte by 16-byte, 8 order (128-byte) write (TO "00 - 7F" of "EEPROM Page A4")
- FOS Default write : 16-mode data (HFh,HFI,VF,STD,HP, VP,Clk,ClkPh,PhFine) write
- Random Data write : write the appointment Address of E2PROM

3) VRAM Read.

- Send CMD(70h) to read Video RAM value from MICOM And save its value to 128-Bytes Buffer(Common Buffer for the use of EDID)



- Delay 500ms (Time to Wait and Read Video RAM from MICOM)
- Be transmitted the contents of MICOM's 128-bytes Buffer to PC.
(128th Data is the CheckSum of 127-bytes data : That's OK if the value of adding 128-bytes Data is Zero)

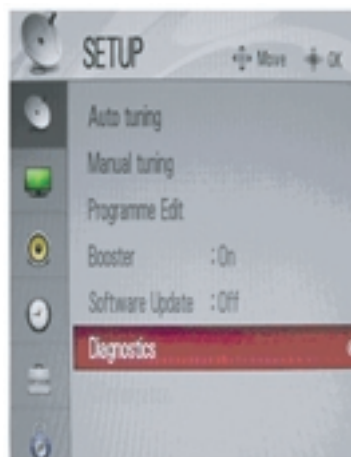


10. Set Information(Serial No & Model name)

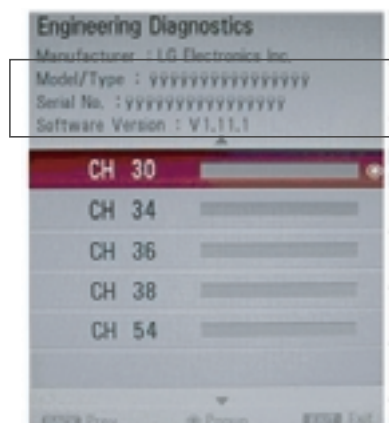
10-1. check the serial number & Model Name

- (1) Push the menu button in DTV mode.

Select the STATION ==> Diagnostics ==> To set



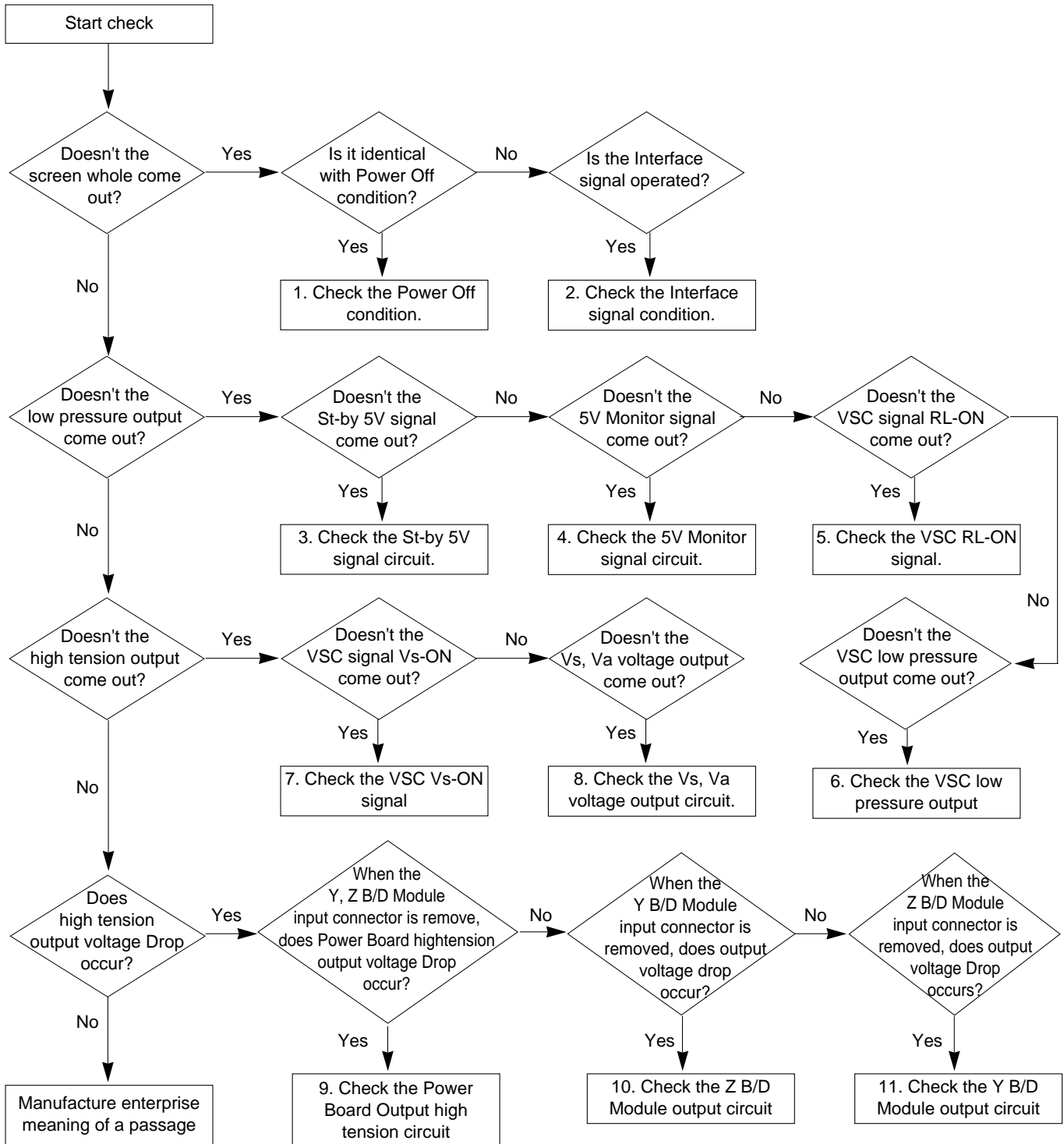
(2) Check the Serial Number



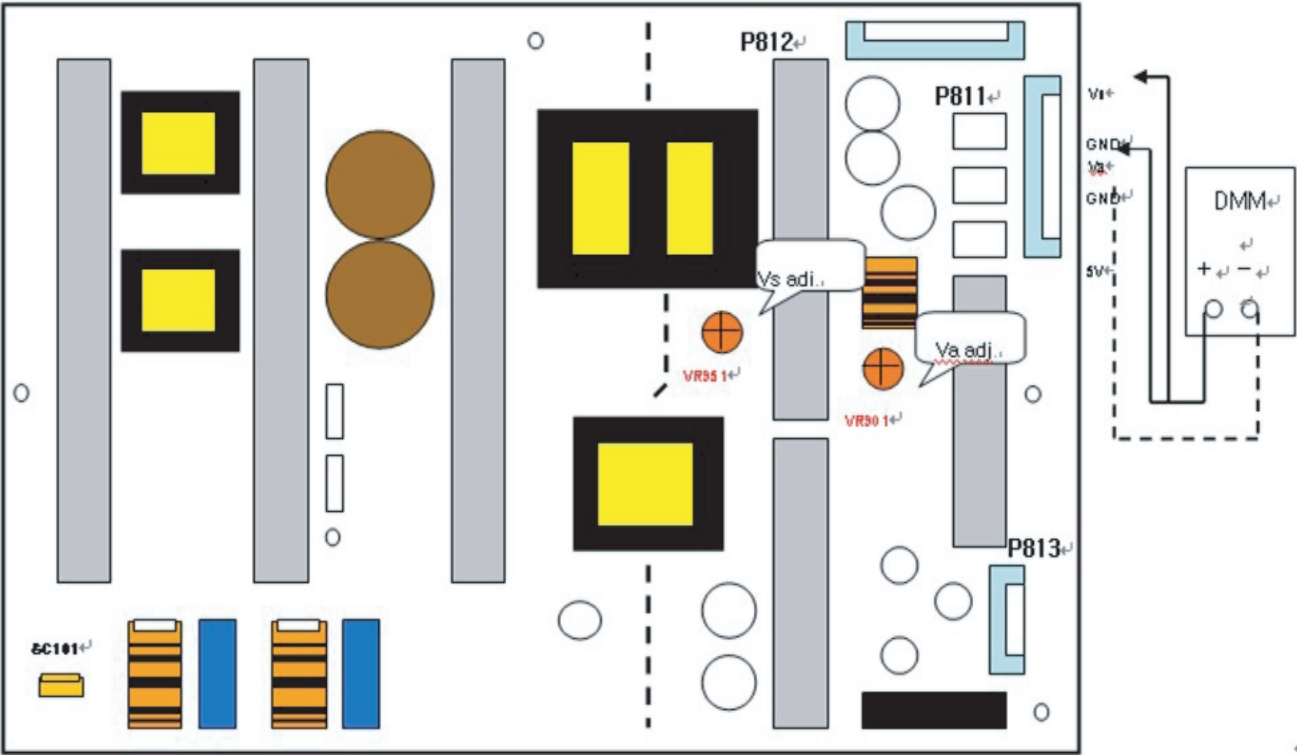
TROUBLE SHOOTING GUIDE

1. Power Board

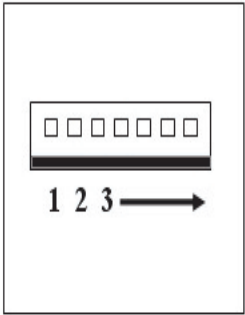
1-1. The whole flowchart which it follows in voltage output state



1-2. 50" Power Board Structure



PIN No	1	2	3	4	5	6	7	8	9	10
P811	V-S	V-S	NC	GND	GND	V-A	V-A	GND	M5V	M5V
P812	V-S	V-S	NC	GND	GND	V-A	V-A	GND	M5V	M5V



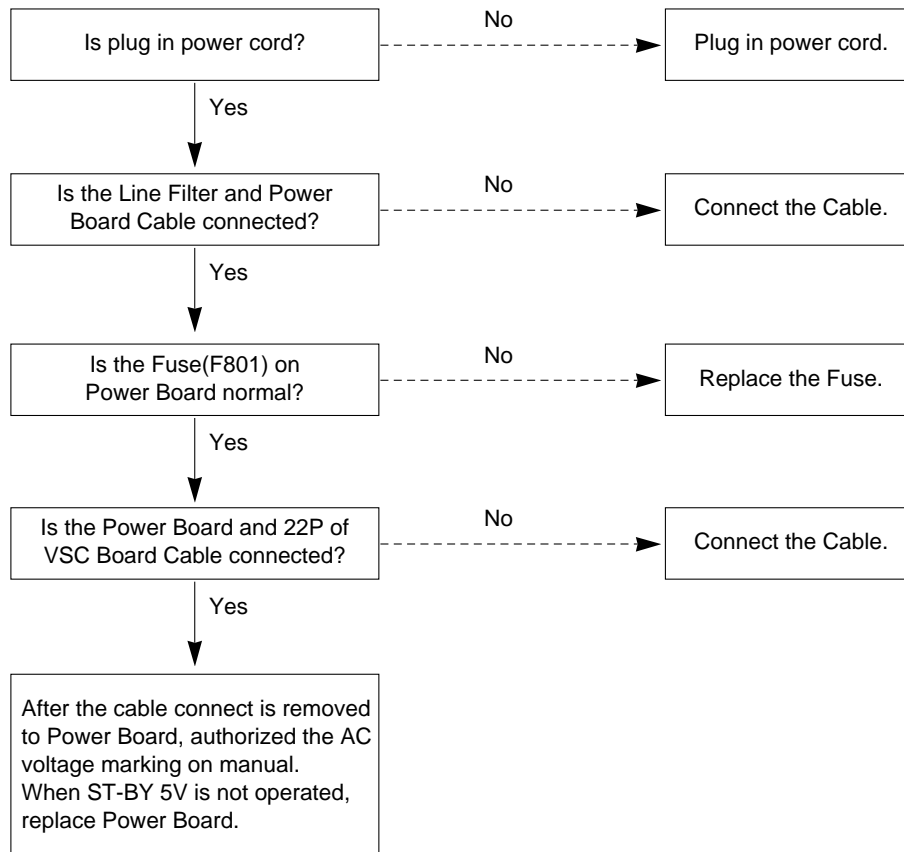
2. No Power

(1) Symptom

- 1) Doesn't minute discharge at module.
- 2) Non does not come in into the front LED.



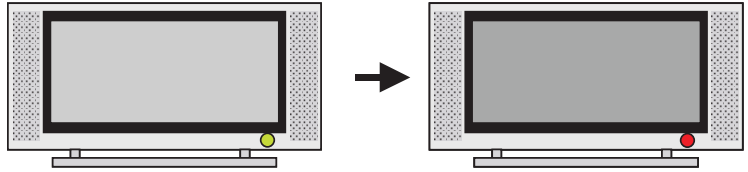
(2) Check following



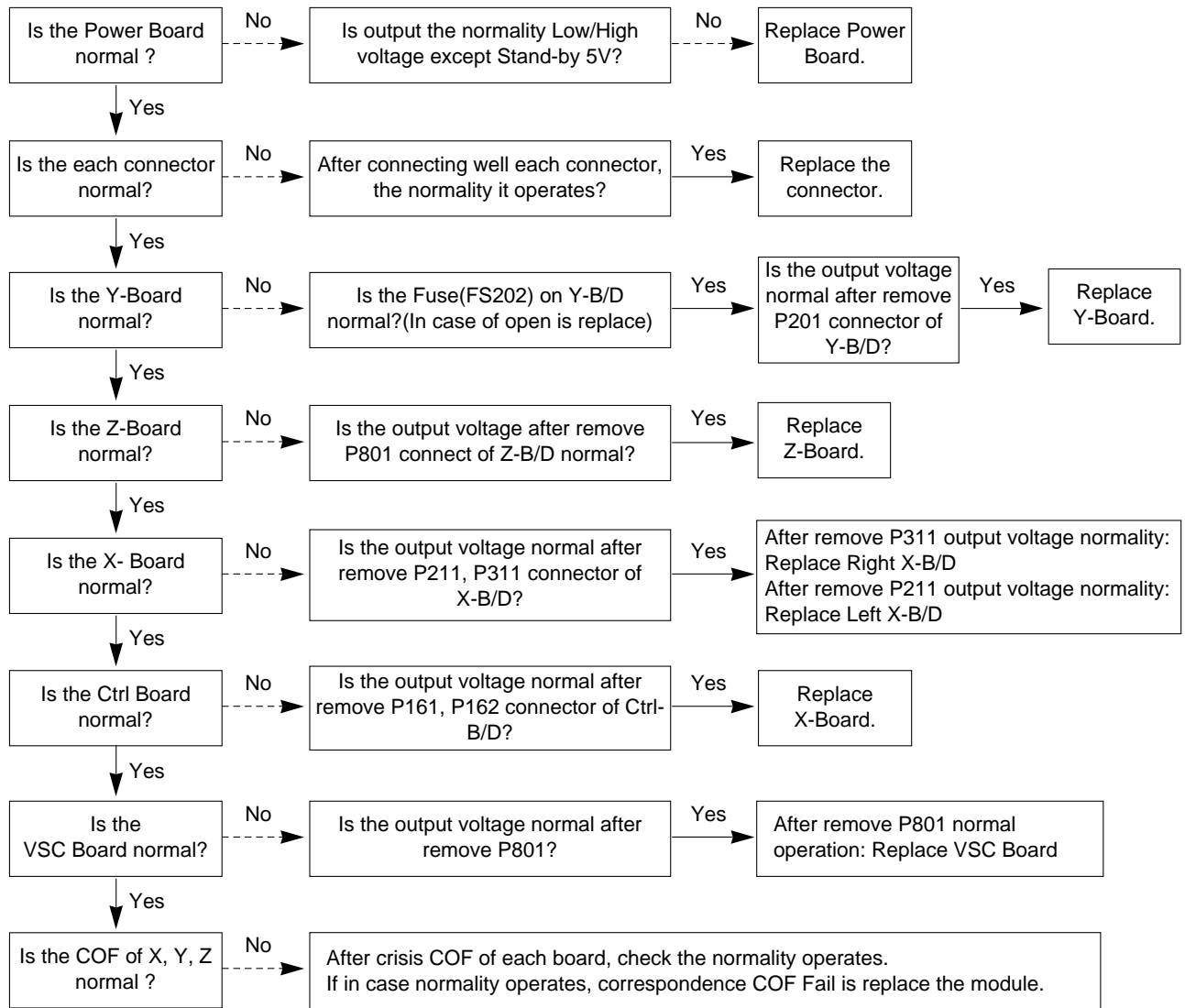
3. Protect Mode

(1) Symptom

- 1) After once shining, it does not discharge minutely from module.
- 2) The Rely falls.(The sound is audible "click")
- 3) It is converted with the color where the front LED is red from green.



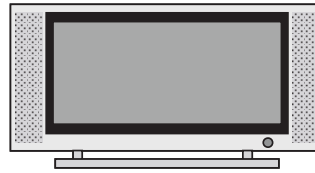
(2) Check following



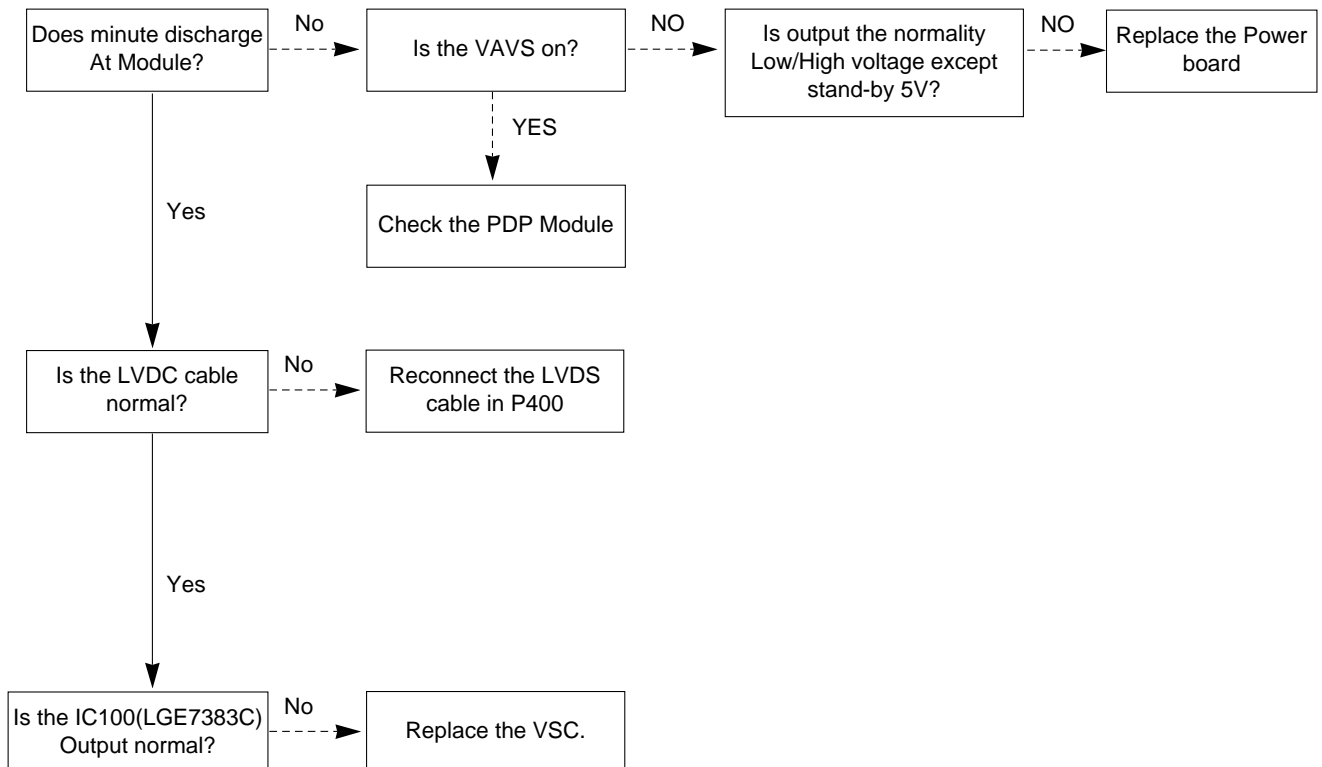
4. No Raster

(1) Symptom

- 1) No OSD and image occur at screen.
- 2) It maintains the condition where the front LED is green.



(2) Check following



5. In case of occurring strange screen into specific mode

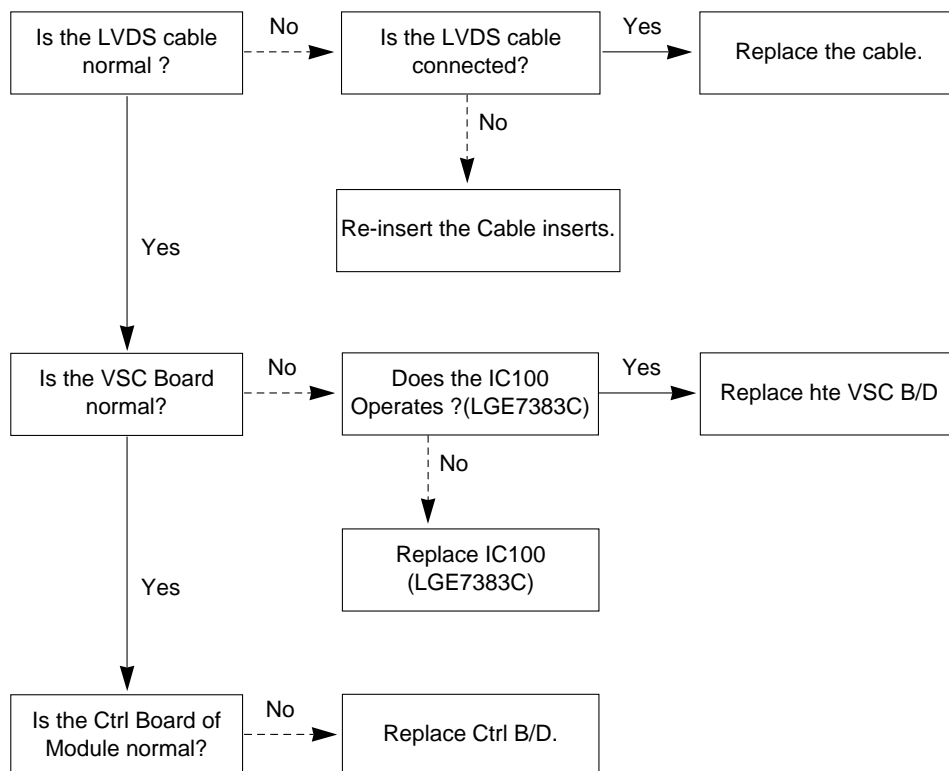
5-1. In case the OSD does not displayed

(1) Symptom

- 1) LED is green.
- 2) The minute discharged continuously becomes Accomplished from module.



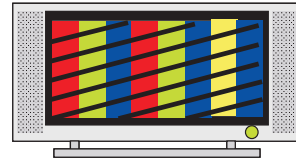
(2) Check following



5-2. In case of does't display the screen into specific mode

(1) Symptom

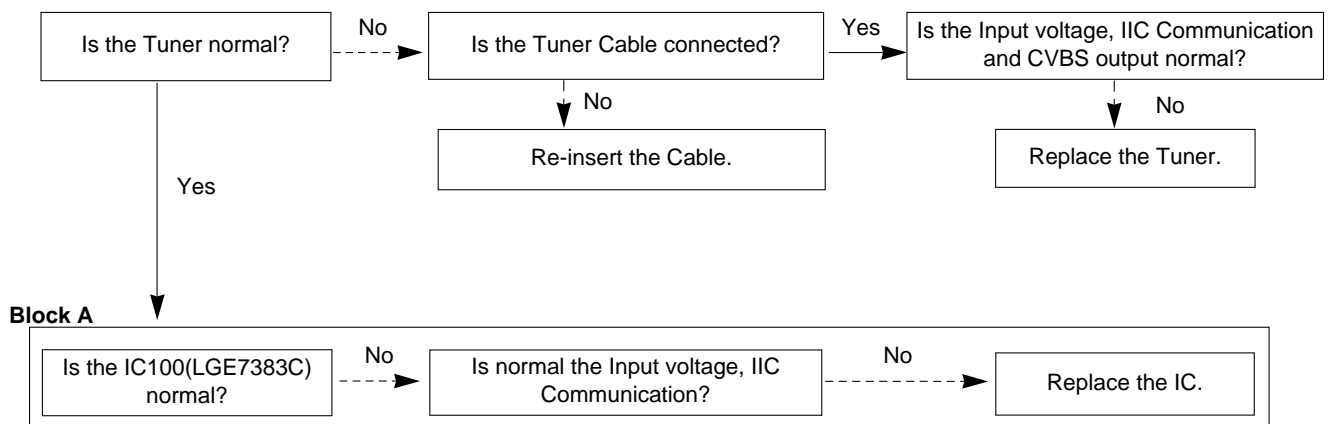
- 1) The screen does not become the display from specific input mode (RF, AV, Component, RGB, DVI).



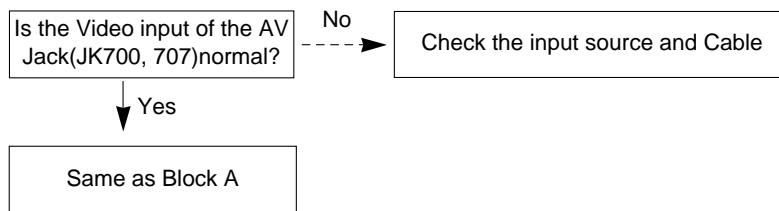
(2) Check following

- 1) Check the all input mode should become normality display.

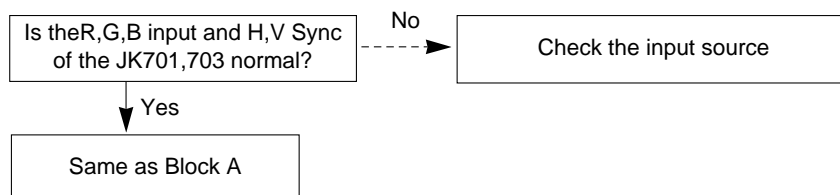
(3) In case of becomes unusual display from RF mode



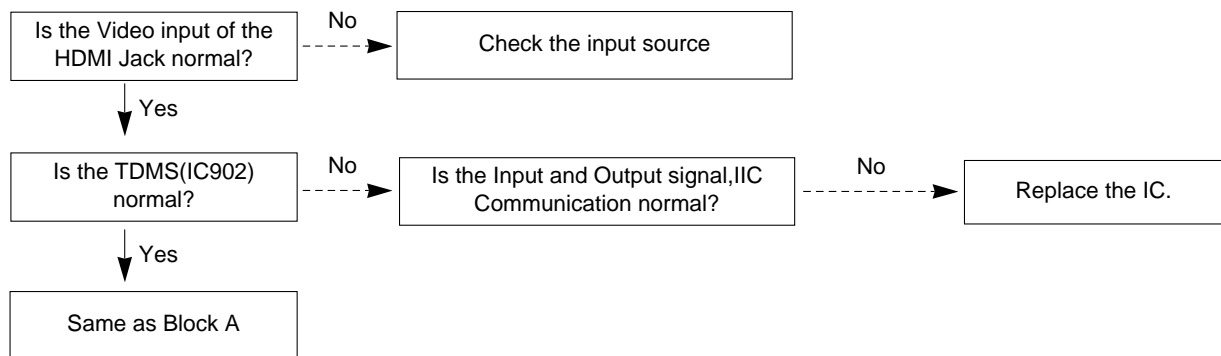
(4) In the case of becomes unusual display from side S-video/AV mode



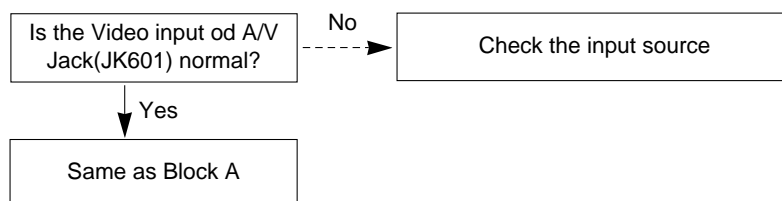
(5) In the case of becomes unusual display from Component, RGB mode



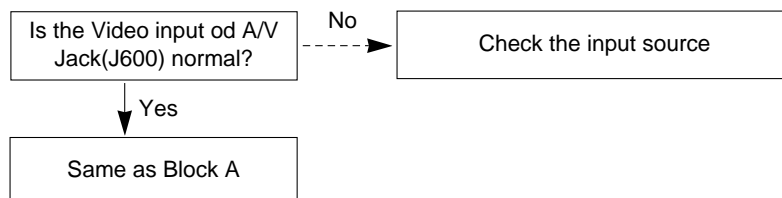
(6) In the case of becomes unusual display from HDMI mode



(7) In the case of becomes unusual display from SCART1 mode



(8) In the case of becomes unusual display from SCART2 mode



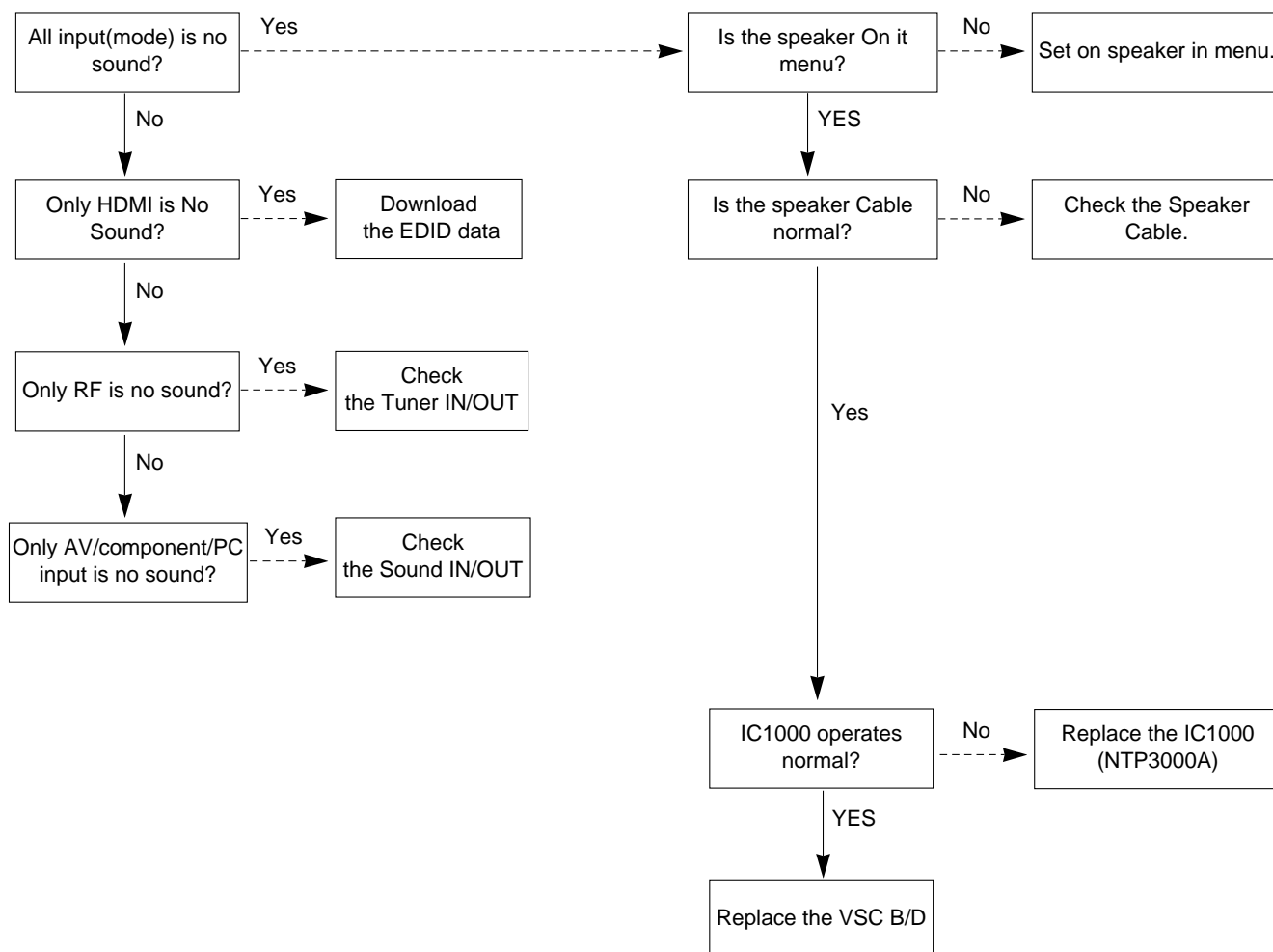
6. In case of no sound

(1) Symptom

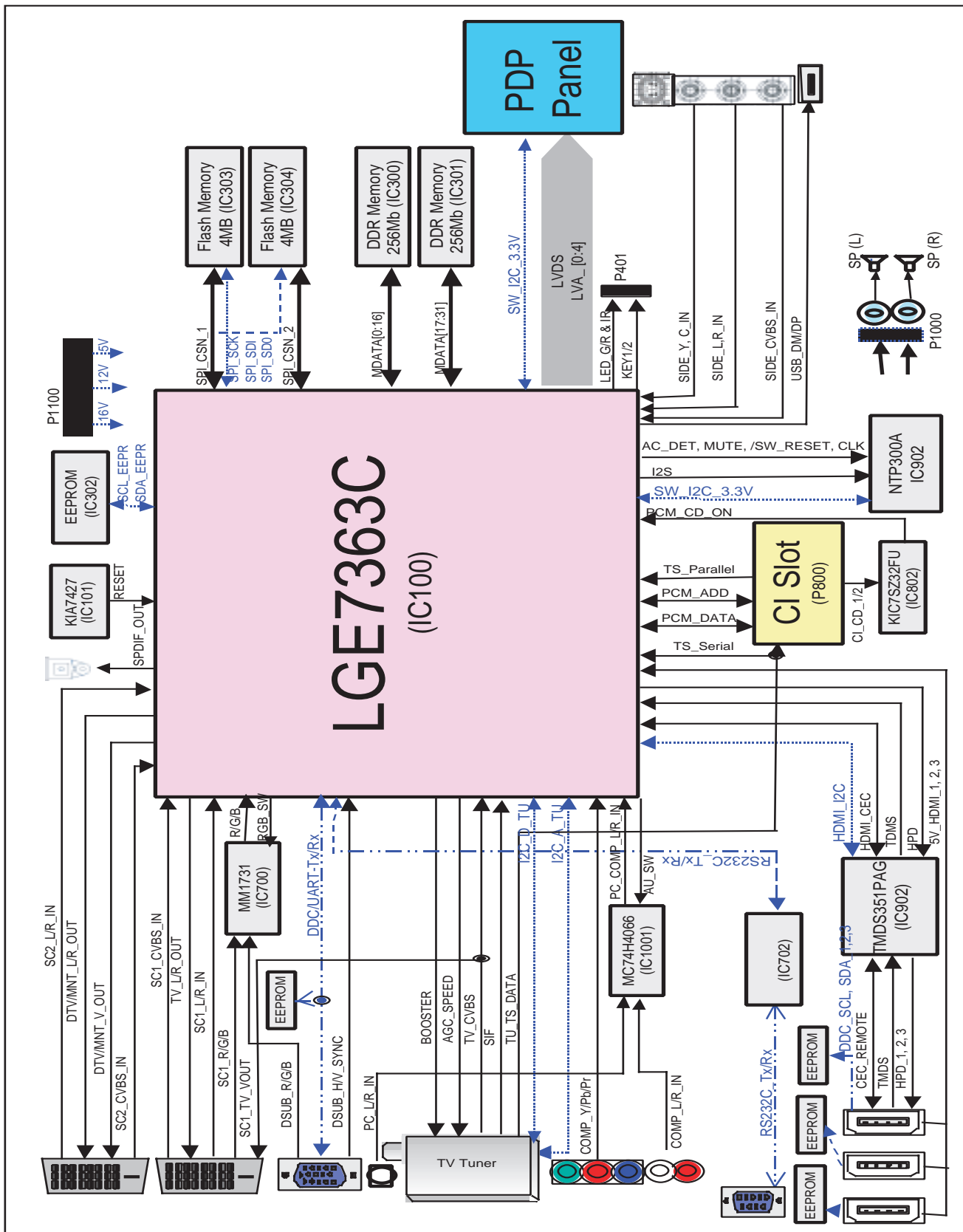
- 1) LED is Green.
- 2) Screen display but sound is not output.



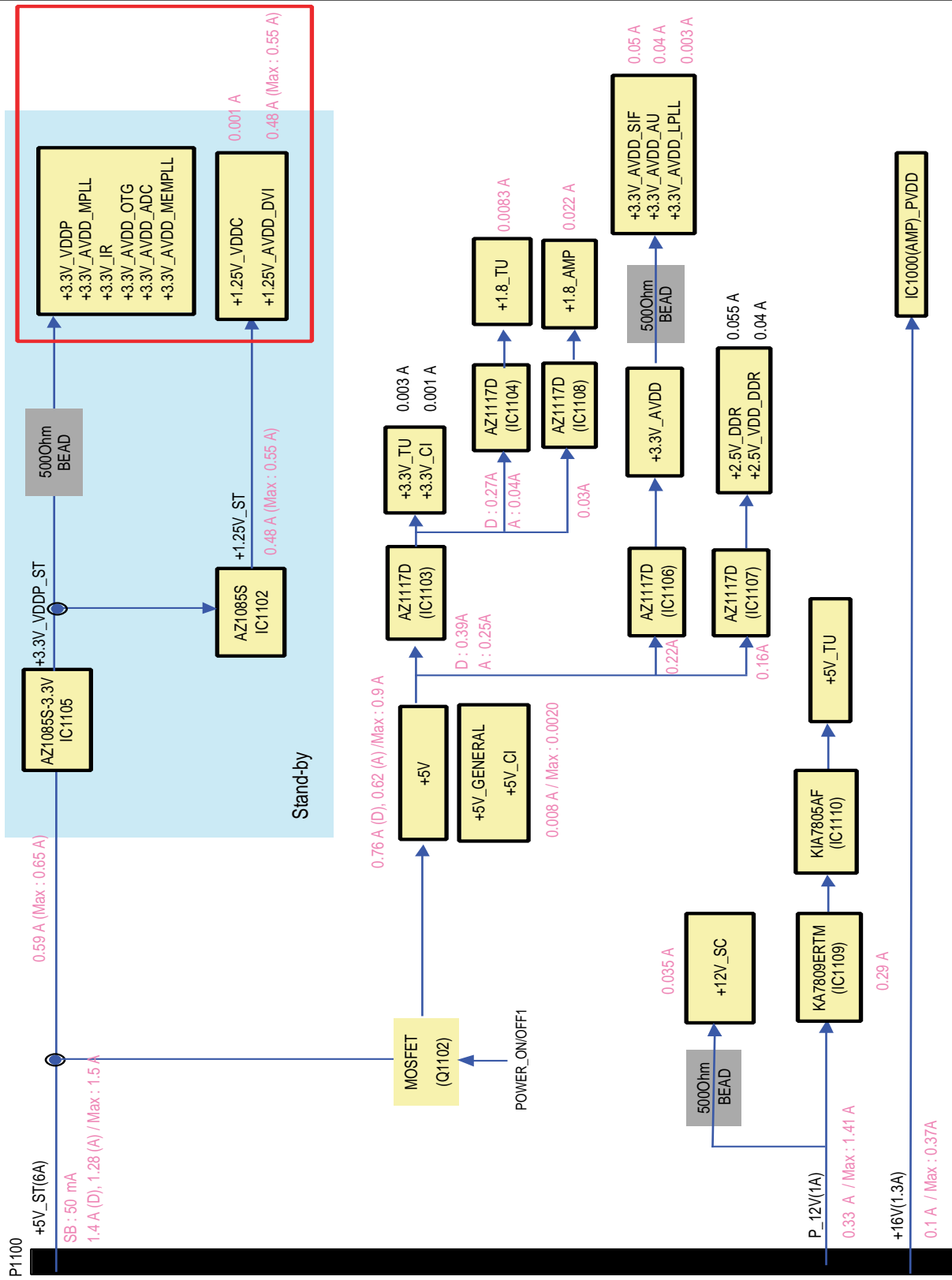
(2) Check following



BLOCK DIAGRAM




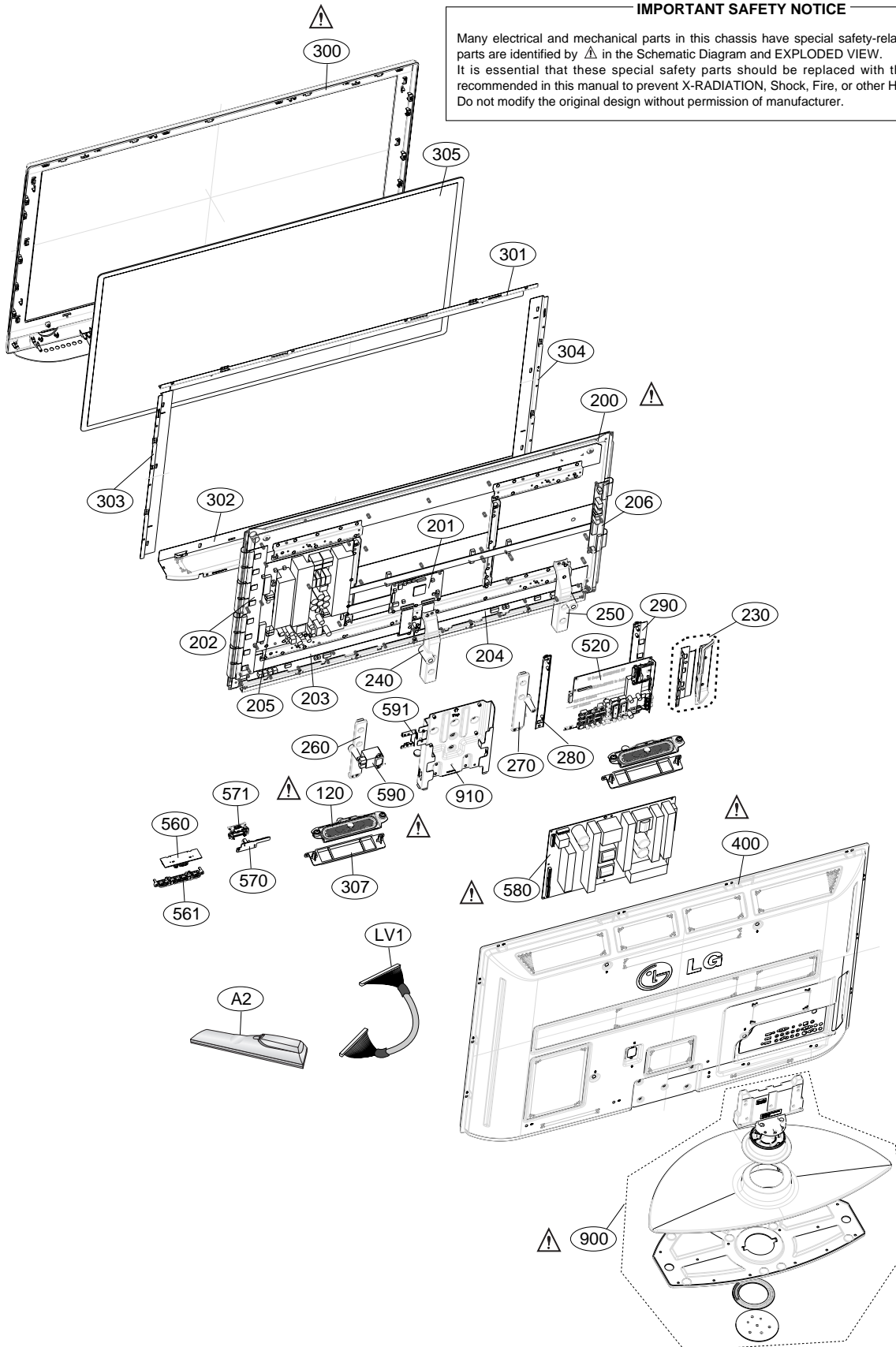
Power



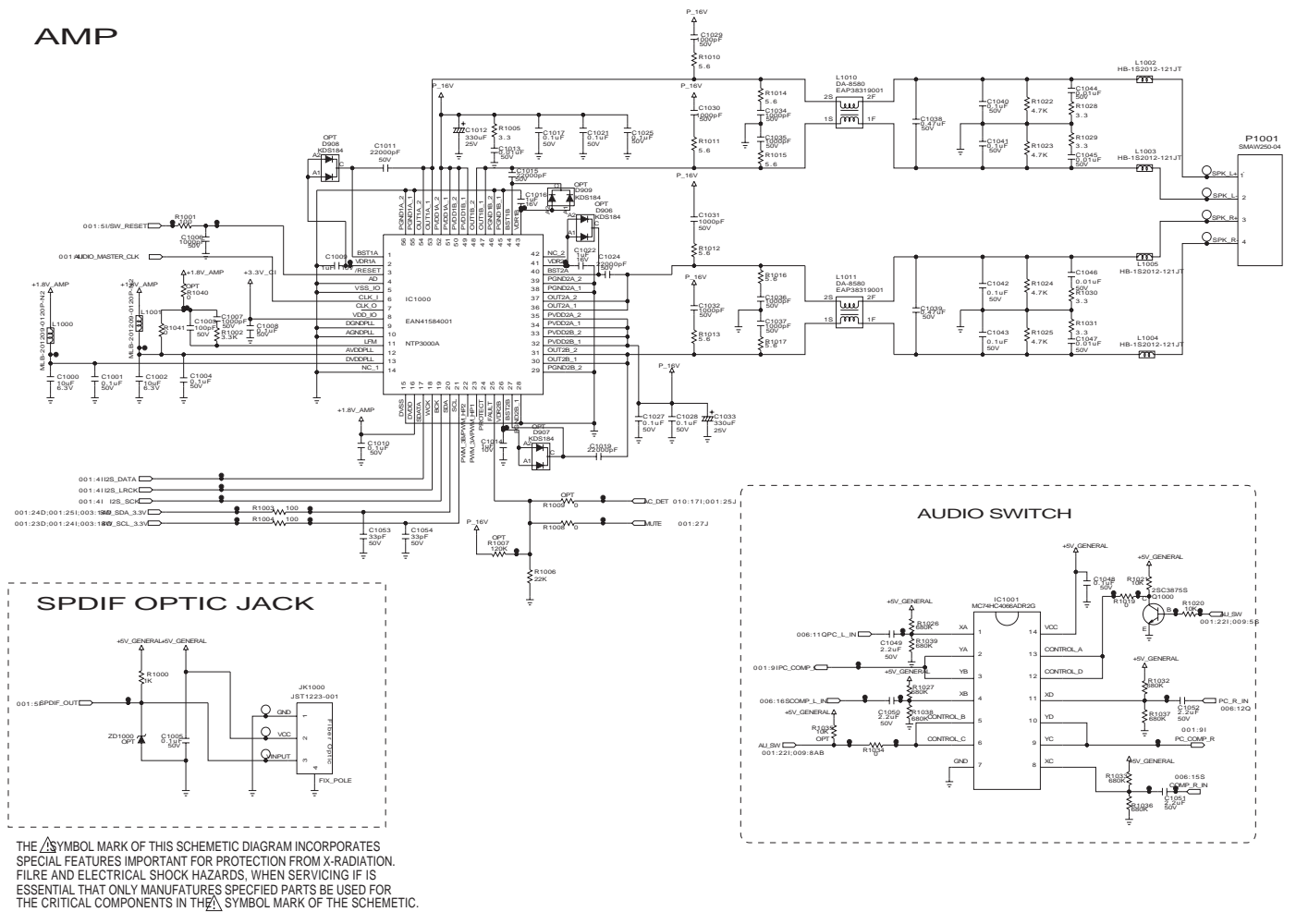
EXPLODED VIEW

IMPORTANT SAFETY NOTICE

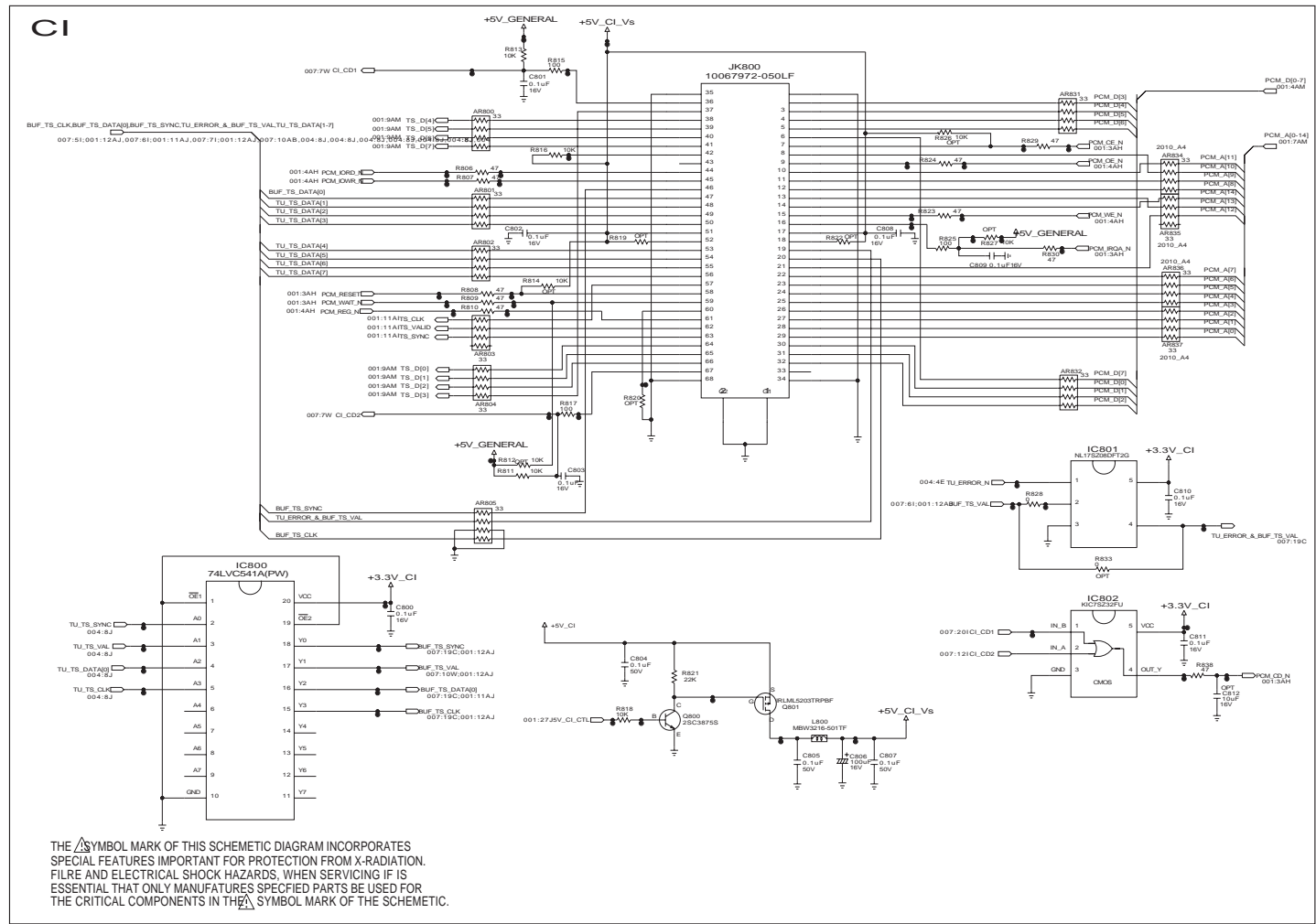
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  in the Schematic Diagram and EXPLODED VIEW. It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards. Do not modify the original design without permission of manufacturer.



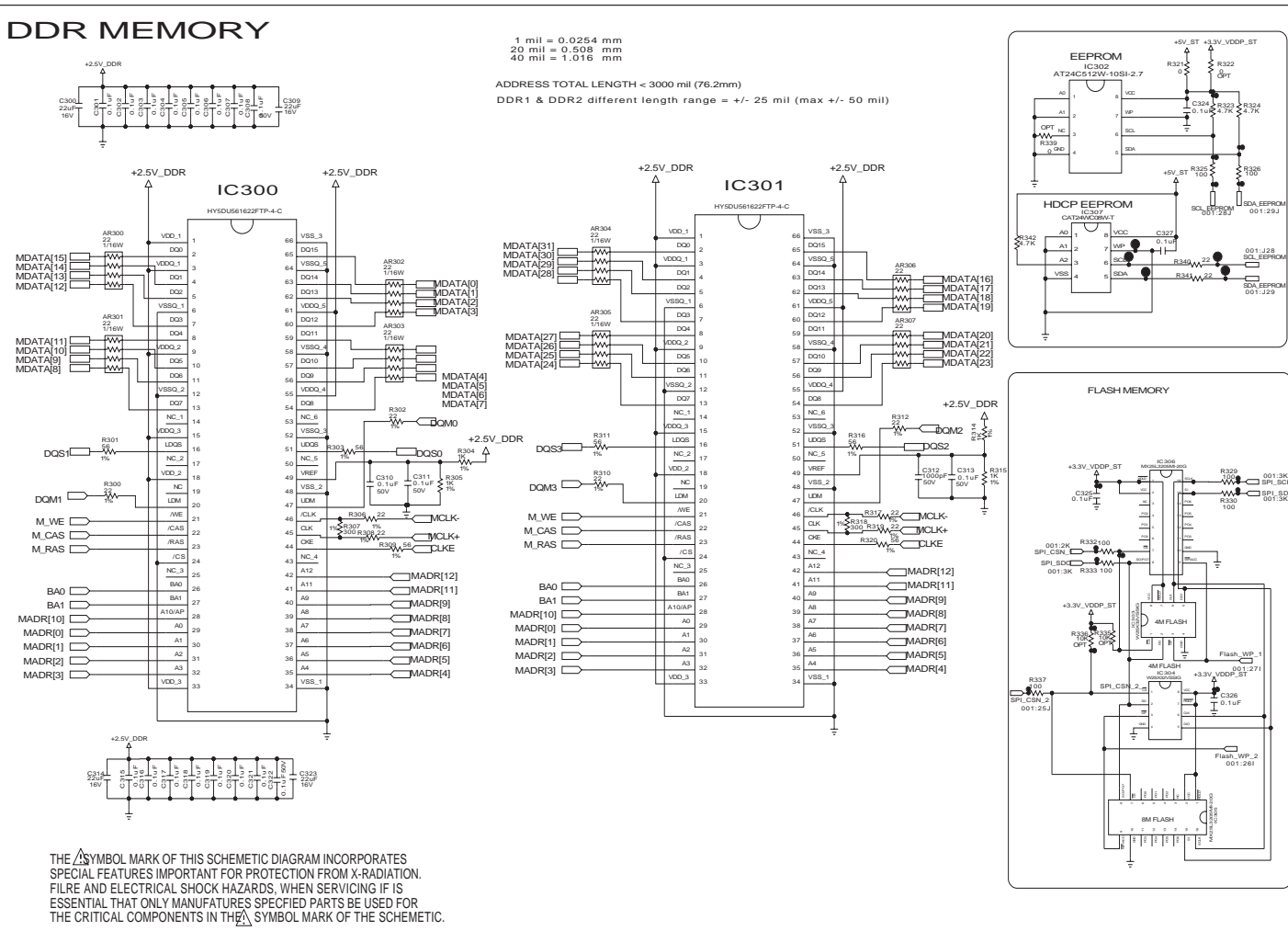
AMP



C1

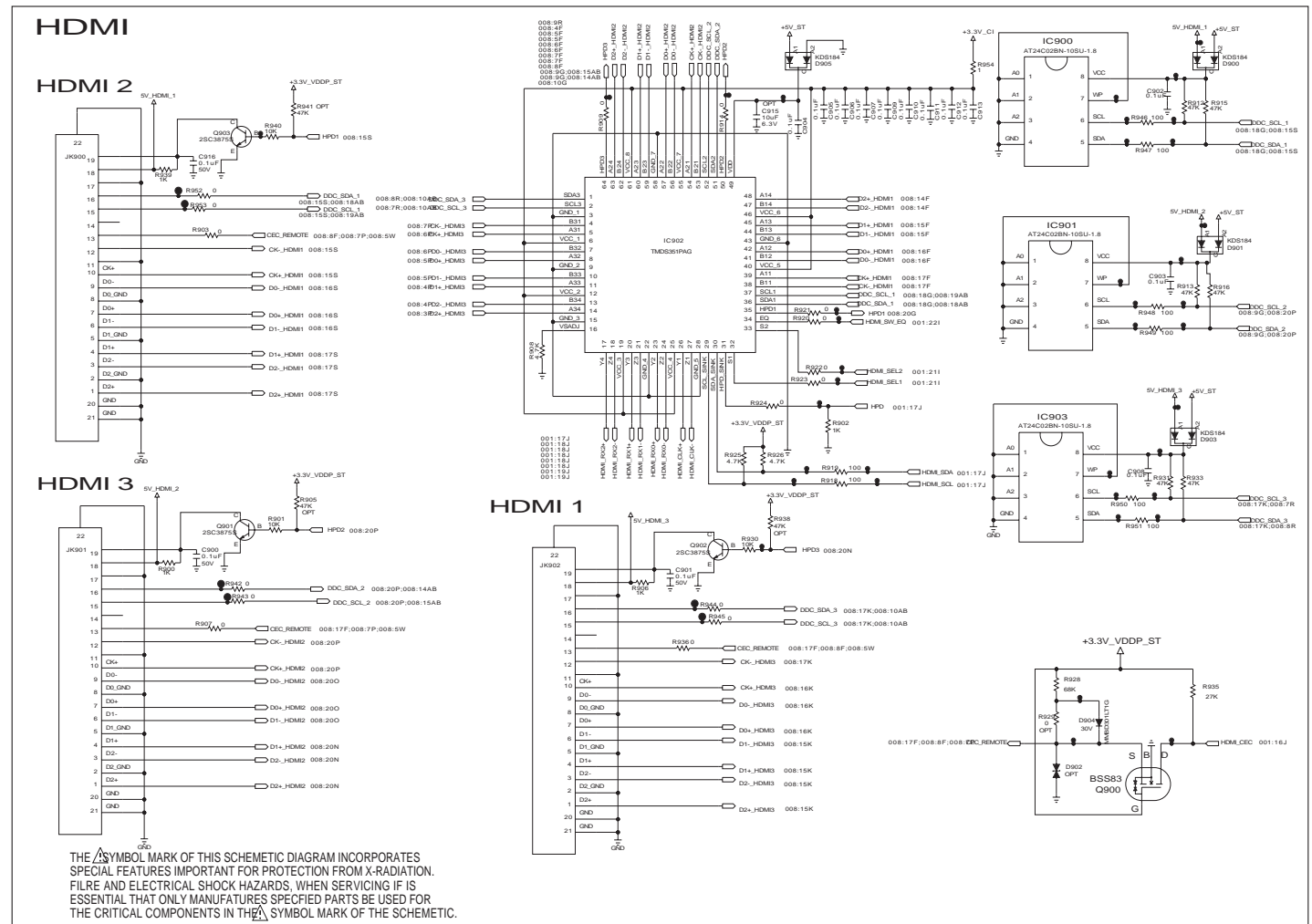


DDR MEMORY



HDMI

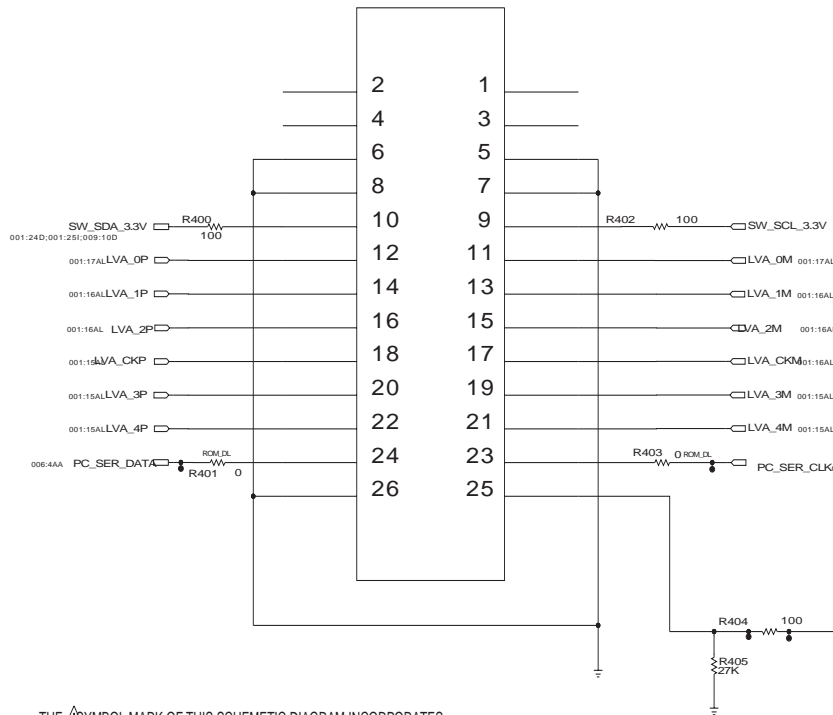
HDMI 2



Module

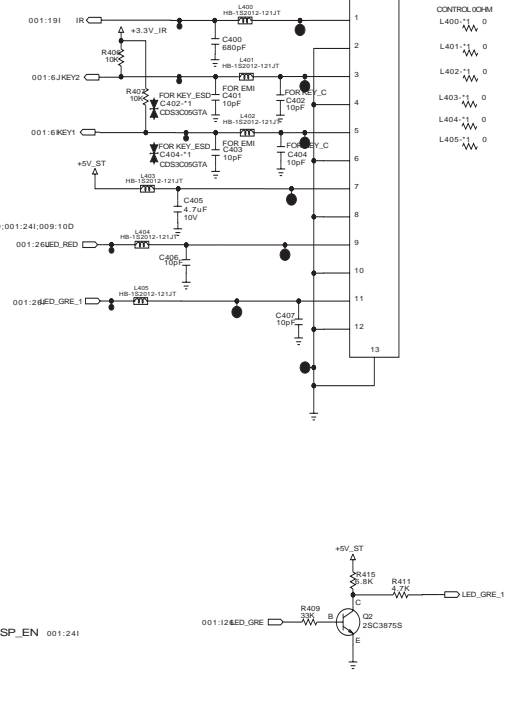
PANNEL WAFER

P400
SMW200-26C

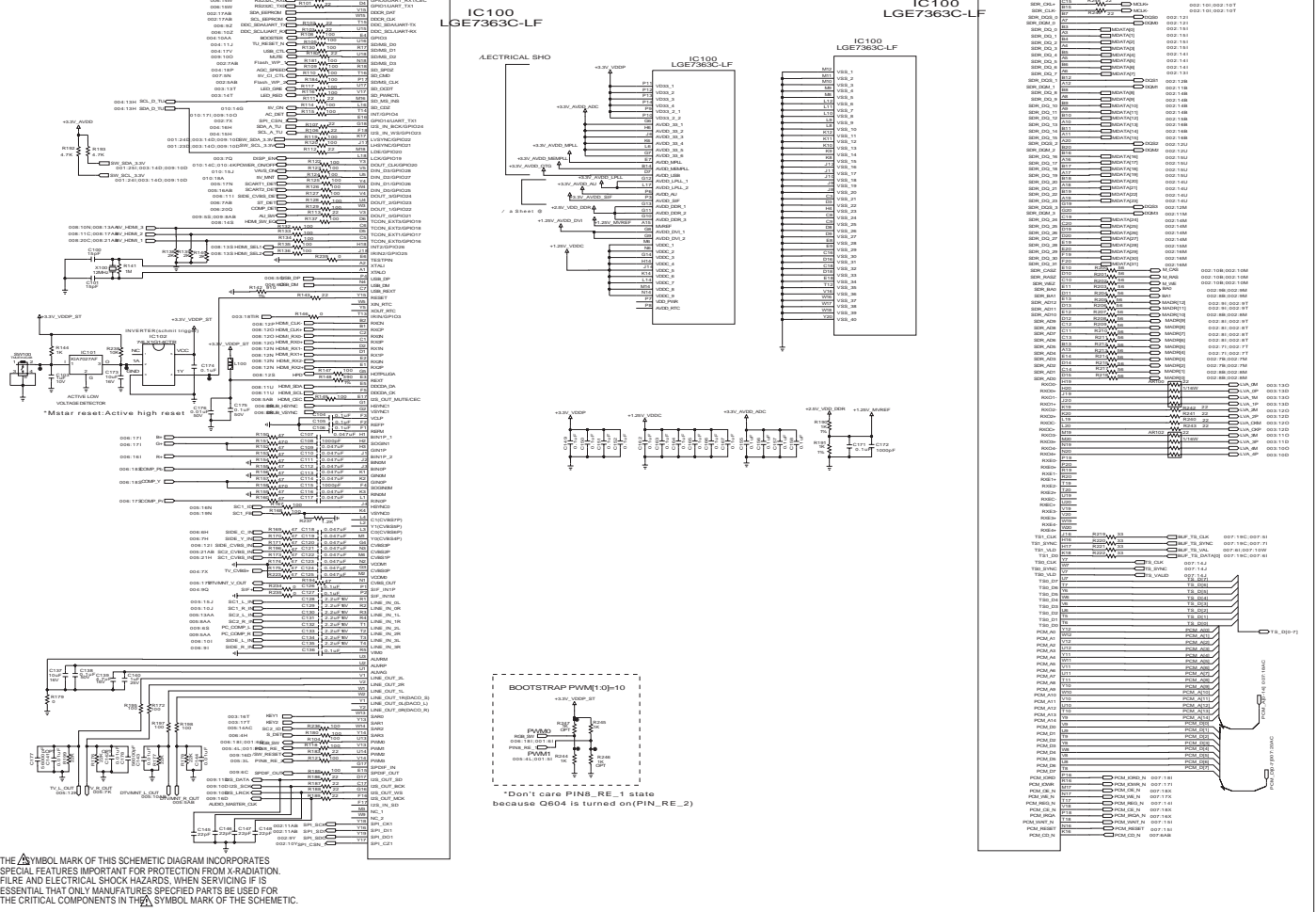


IR/CONTROL

P401
12505WS-12A00

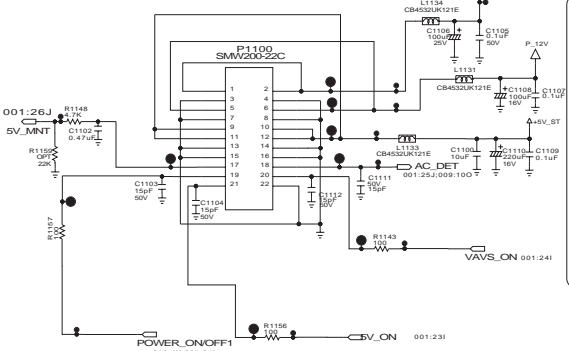


MSD2379AQ

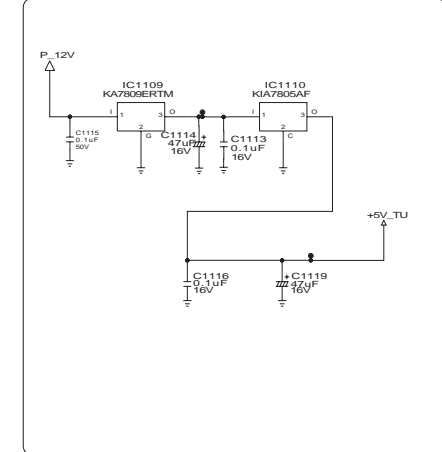


THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.

POWER B/D

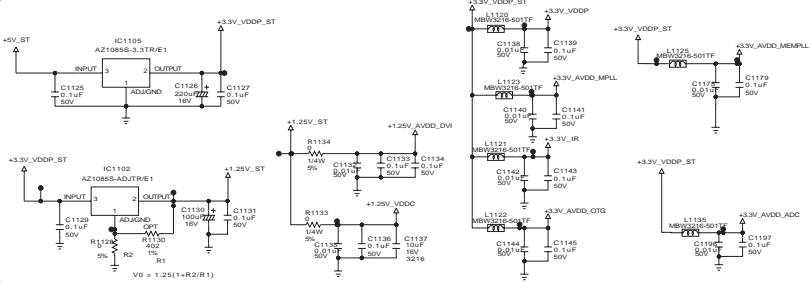


TUNER +5V

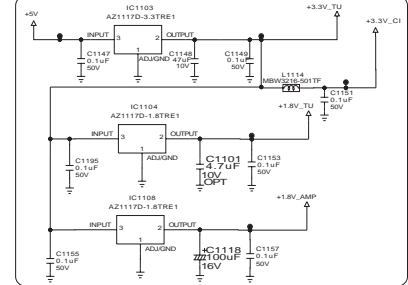


THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.

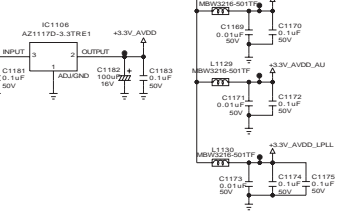
Stand-by +3.3V_+1.25V_MST_Core



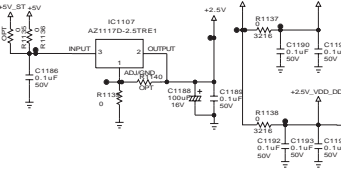
TUNER_CI +3.3V_+1.8V



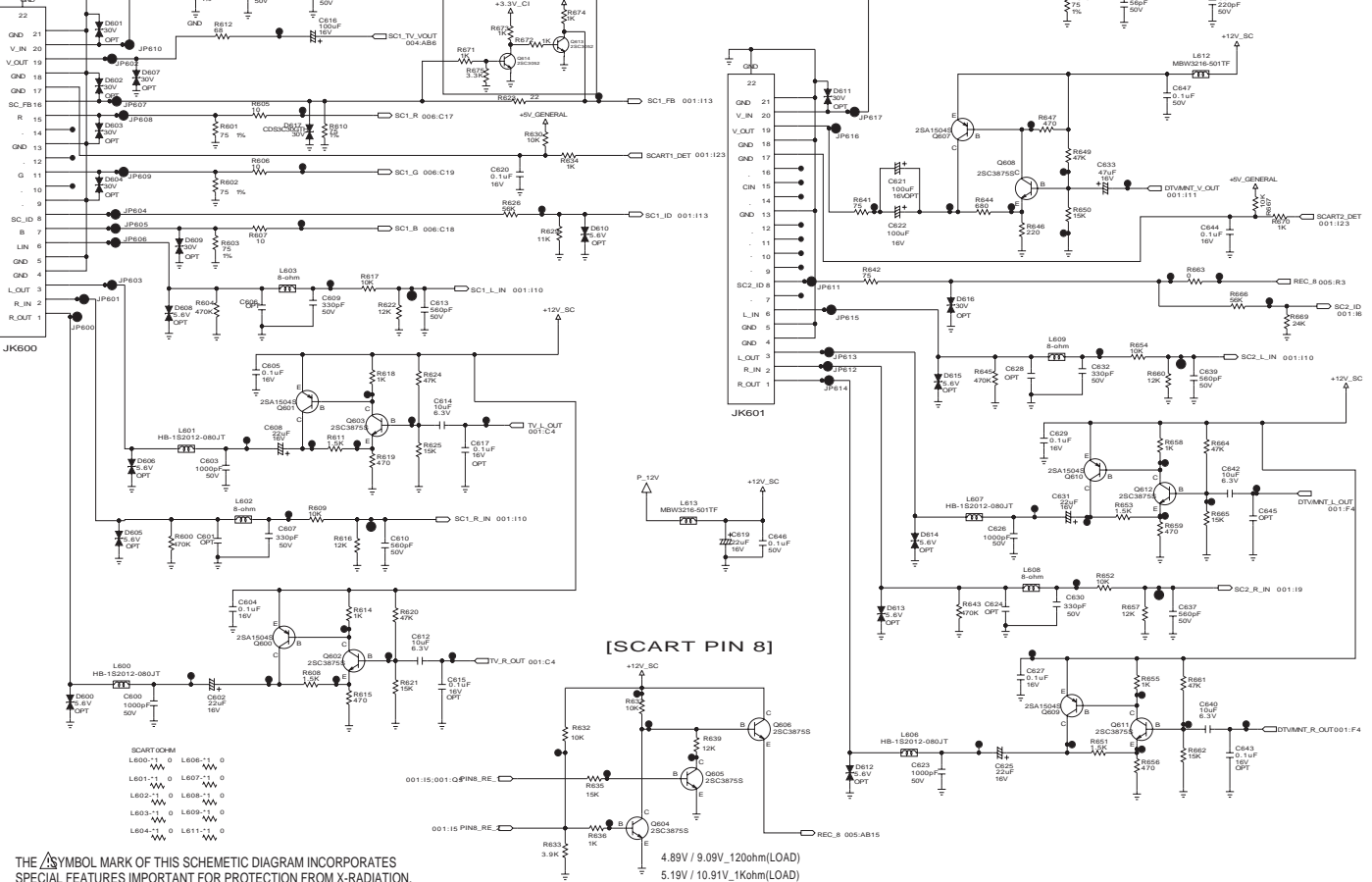
+3.3V_MST



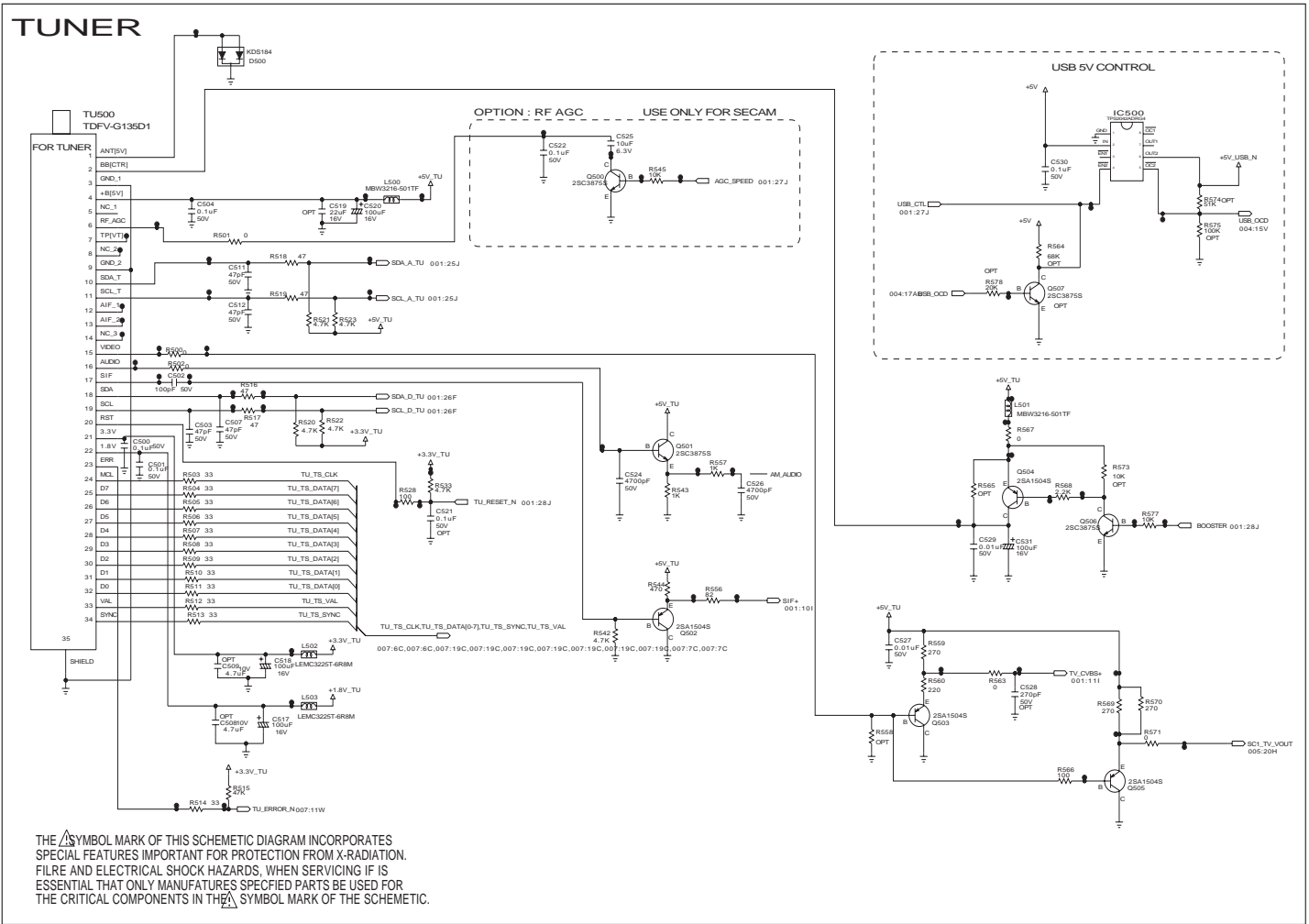
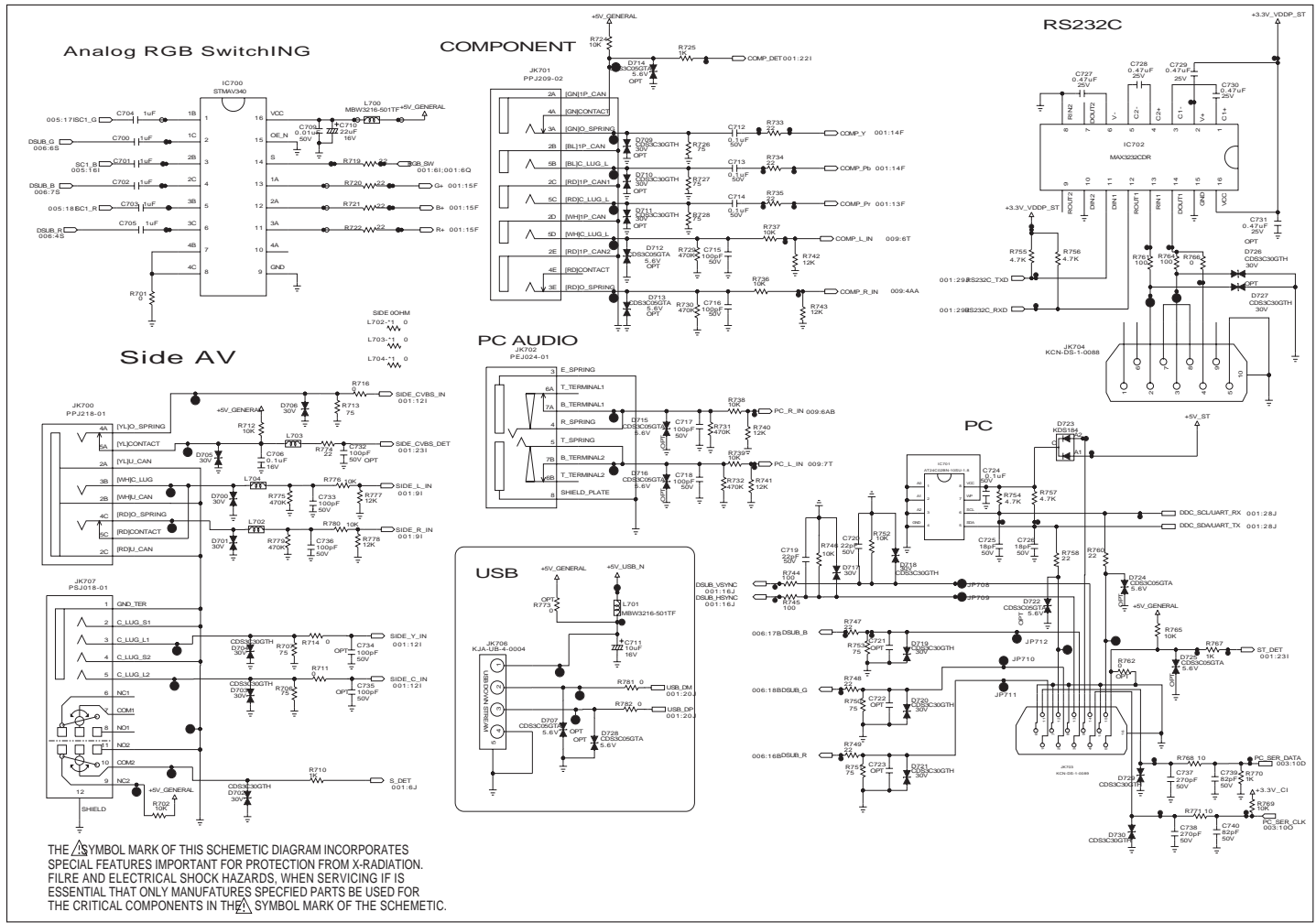
+2.5V_DDR



SCART

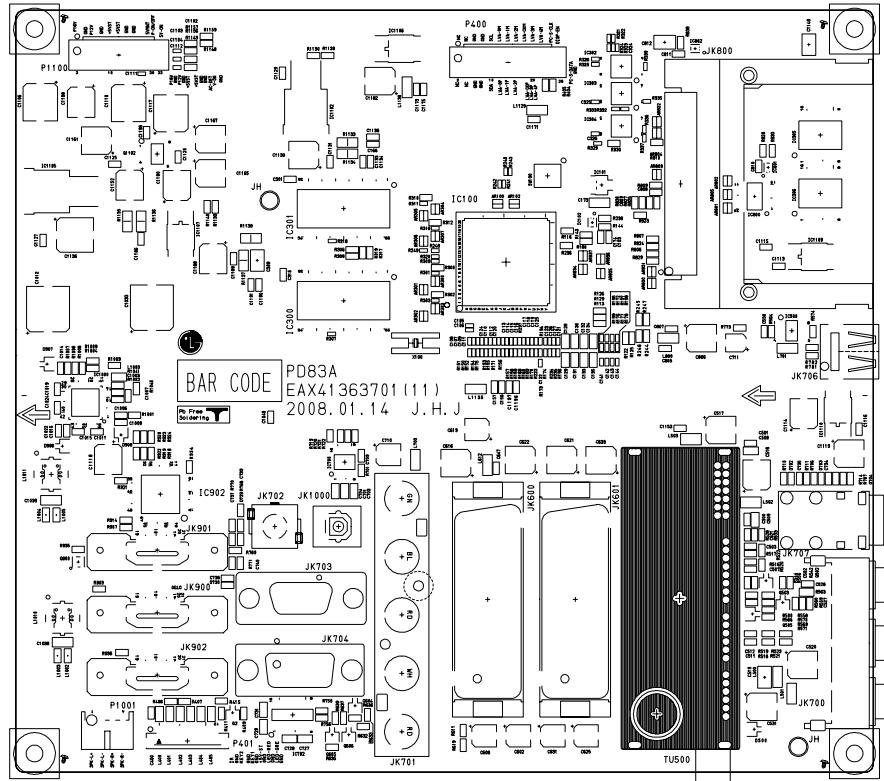


THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.

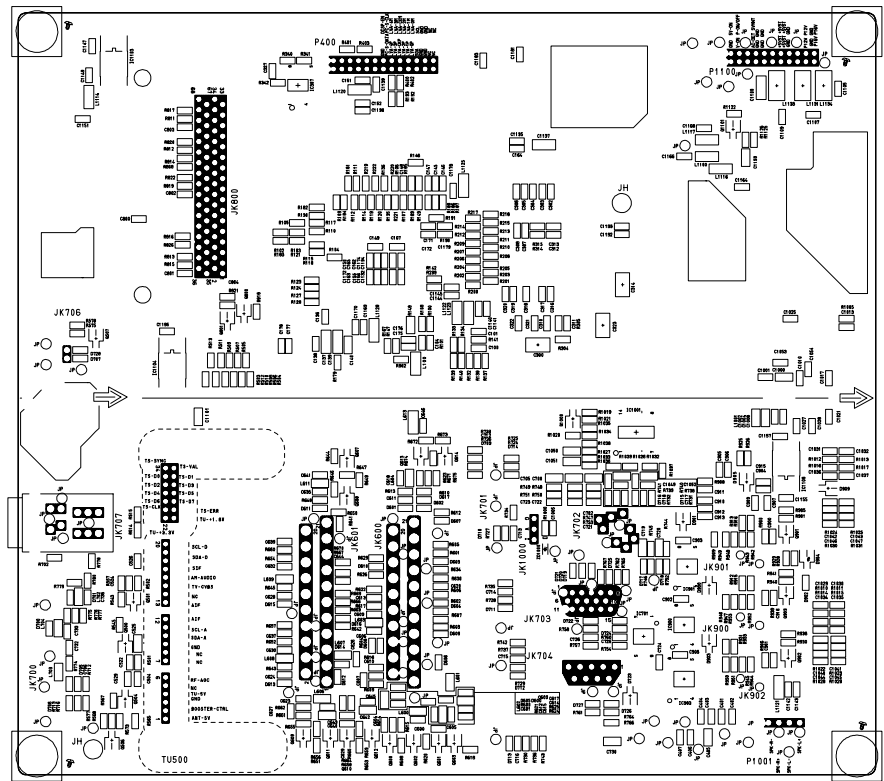


PRINTED CIRCUIT BOARD

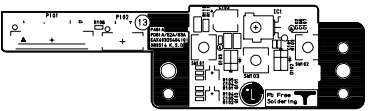
MAIN(TOP)



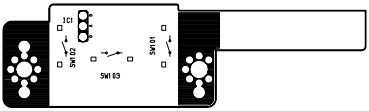
MAIN(BOTTOM)



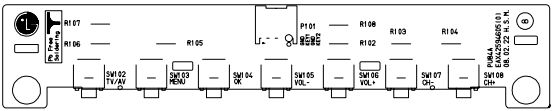
PRE AMP(TOP)



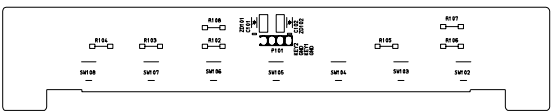
PRE AMP(BOTTOM)



CONTROL(TOP)



CONTROL(BOTTOM)





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